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ABSTRACT

This guide was the first of its kind for public supported Resident Outdoor Environmental Education Programs (ROEEP) in California. The document contains an instrument which will identify the strengths and possible areas of improvement for specific resident outdoor environmental education programs. The instrument and procedures were field tested. The purposes of the document are: (1) to provide standards for ROEEP certification (making the institution eligible for possible state funds), and (2) for self-study to improve the local program. The check lists and procedures include many useful ideas for anyone involved with resident education programs. (RH)

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Guide for Self-Appraisal and Certification of

RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAMS

This guide was produced by the Office of the Los Angeles County Superintendent of Schools under a grant funded by the California State Department of Education through the Environmental Education License Plate Grant Program.

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FOREWORD

The following guide represents a first-of-its-kind effort for public supported Resident Outdoor Environmental Education Programs (ROEEP) in the State of California. In a desire to maintain or improve the high quality of such programs, the California State Department of Education, county school officials, and local district educators have worked together to produce a procedure for self-study and/or certifying outdoor schools. This unique document contains an instrument which will identify the strengths and possible areas of improvement for specific resident outdoor environmental education programs. The instrument and procedures have been field-tested in four sites throughout California—two in the northern part of the State and two in the south.

This guide will be used for at least one year during which the document will be refined through statewide application. At the end of this period, a second version may be published incorporating the necessary changes identified through actual use.

The California State Department of Education granted Personalized License Plate funds to the office of the Los Angeles County Superintendent of Schools to produce this self-appraisal and certification guide. Those involved in its development have given both time and talent and are identified in the Acknowledgments.

ACKNOWLEDGMENTS

Credit for this publication rightfully begins with the efforts of Rudolph J. H. Schafer, Consultant in Environmental Education, California State Department of Education, and Jack L. Davidson, Outdoor Education Consultant, Office of the Los Angeles County Superintendent of Schools. Basic concepts of the project and the broad outline of the resulting publication were worked out by these men. Mr. Schafer has diligently championed development of environmental education in California and participated closely in the development of the following guide; he is the primary author of Part I. Mr. Davidson has been the Director of the Project and skillfully managed its development from beginning to end. Marguerite Wiig, Mr. Davidson's secretary, proved to be an invaluable aide through her tireless efforts.

R. Ronald Wood, Ph.D., acted as consultant/writer and prepared the several drafts of instrumentation and other copy for committee reviews. He worked closely with all the persons involved in the project while attempting to reflect their expertise, experience, and desires. Ann Davis, self-employed graphics and publications specialist, was responsible for the technical production, while Linda Ayers, a graphic artist with the Office of the Los Angeles County Superintendent of Schools, designed the cover.

Appreciation is expressed to the two special consultants who provided necessary guidance from the higher education academic community. These were Esther Railton, Ph.D., Professor of Education, California State University at Hayward, and William Hammerman, Ph.D., Professor of Education, California State University at San Francisco.

Special mention must be made of the two committees which are listed below. The project planning committee was responsible for the development of the guide and the project review committee attempted to make sure that what was produced would be useful to practitioners in the field.

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Finally, mention is made of the leadership of California State Senator Peter Behr. His effort to secure funds for resident outdoor environmental education programs in California was an important factor leading to the development of this publication.

PART I

INTRODUCTION/STATEMENT OF PURPOSE

Understanding and solving the serious environmental and resource conservation problems facing our State and nation require an informed and knowledgeable public. Providing effective environmental education programs which will help students to live in harmony with the natural environment and solve environmental problems is a major obligation of public education. Effective environmental education programs should help students develop:

- *An awareness* of their interdependence with a finite ecosystem and the need for individual and social action to preserve its health and conserve its resources.
- *Knowledge* of the scientific, technological, social, political, and cultural factors which affect the environment and the effects of human interaction with it.
- *Skills*–both individual and social–which will enable the individual to recognize and solve environmental problems and otherwise participate in the work of conserving the environment and its resources.
- *Commitment* to working actively for a better environment for everyone.

Ideally, such an educational program should permeate the entire curriculum from kindergarten through all grades and appropriate subject areas as specified in the California Education Code. To be successful, environmental education must be an integral part of the entire school experience–not another interesting "add-on" to an already crowded curriculum.

For many years, an important component of the statewide environmental education effort has been the resident outdoor school program. Resident outdoor schools enable youngsters–typically sixth graders–to observe and study environmental relationships in a natural setting for a significant time period–usually a five-day school week. In addition to providing a variety of unique environmental learning experiences, resident outdoor schools permit an interaction between students, classroom teachers, and resident staff which leads to the achievement of additional valuable learning objectives.

The resident outdoor school movement in California had its beginnings in 1946 in San Diego County, and was known then as the School Camp Program. Through the years, additional programs came into existence, and currently there are 26 operating on a full-time basis serving approximately 100,000 pupils. Most programs are conducted by County Offices of Education, but two large City District programs–Los Angeles and Long Beach–serve a large number of students.

A variety of facilities are used for these programs. Some outdoor schools are owned and operated entirely by county offices or school districts. Others operate in facilities owned by other agencies which provide food and other services. Two county resident outdoor programs operate in former Job Corps Centers.

There is also a wide variety of approaches to the instructional program. Credentialed teachers, instructional aides, and student teachers all serve as instructors in various programs. In some cases the curriculum is highly developed and structured, while in others the teachers who accompany their classes have almost unlimited latitude in working out a program suited to the needs of their classes. One characteristic, however, is typical of all good programs: They relate to the on-going school program and provide environmental learning experiences which cannot be provided in the regular classroom or school community.

1. Identification of Needs for Certifying Residential Outdoor Environmental Education Programs

As is the case with many school programs, resident outdoor schools are feeling the inflationary pinch. In most cases direct parental contributions are used to cover all or part of the room and board expenses of students, and the amount charged increases each year. Although community funds are often provided for hardship cases, increased costs tend to penalize children from families with limited financial resources—often the children most in need of this kind of learning experience.

Aside from regular ADA funds, no state financial support is provided for resident outdoor school programs. Recognizing that rising costs were forcing many students and school districts out of the program, Senator Peter Behr introduced legislation in 1974 to provide a small subsidy—approximately $20 per student for a five-day program—on a one-time-per-student basis. The bill was approved by the Legislature, but later vetoed by the Governor. Another bill authorized by Senator Behr with the same intent, SB 159, is currently under consideration by the Assembly Ways and Means Committee.

The proposed legislation requires that the Department of Education adopt rules and regulations concerning the establishment of outdoor environmental education schools and certify programs for state funding. Resident outdoor schools as described in the legislation should provide:

- A curriculum which will help students understand the interrelationships of the physical environment and man's role in the ecosystem toward the development of skills, attitudes, knowledge, and commitment concerning the wise use of natural resources, and the protection and enhancement of the environment.
- A site at which a variety of environmental phenomena may be observed and studied first hand.
- Materials, equipment, personnel, and facilities to permit students to observe and study environmental phenomena and interrelationships to the best possible advantage.
- Appropriate facilities and staff for the feeding and lodging of students and teachers while in attendance at the center.
- A program which requires pupils to attend a minimum of three consecutive nights.

2. Plan for Meeting Identified Needs

As the bill moved through the Legislature, it became evident that the Department of Education should be doing some preliminary work to develop guidelines for reviewing and certifying programs. Various people active in this area of education suggested that the most effective procedure would be to develop such programs cooperatively with those involved in the day-to-day operation.

The discussions also brought out the feeling that some sort of mechanism which would permit a careful and detailed self-study of resident programs would be most valuable—especially an approach which would establish a state-wide communications network.

With this background in mind, Jack Davidson of the Office of the Los Angeles County Superintendent of Schools conceived a project through which evaluative instruments for resident outdoor schools could be developed and field tested with the aim of eventually certifying specific programs. The project was submitted to the State Department of Education and funded in June of 1975.

The project called for a part-time staff to develop the self-appraisal/certification instrumentation which was reviewed by a wide range of people active in the field. Three two-day meetings were scheduled for this purpose. To develop the instrumentation and guide for review by the above people, these steps were followed:

Planning committee reviewed references appropriate to the project

Initial self-appraisal/certification instrumentation was developed from a collection of cards with one question on each.

Question cards were grouped into categories by the project planning committee.

First draft of instrumentation written by project writer

First draft critiqued by the planning committee

First draft rewritten

First draft pilot tested at one site

Revisions made in first draft based upon pilot testing

First draft was presented to the project review committee (state-wide committee); these persons worked in small groups and as a total body critiquing the instrumentation; critique occurred in a two-day live-in setting

Project staff incorporated suggestions from review committee into a second draft

Second draft presented to the planning committee for critique and revisions

Project staff incorporated planning committee suggestions into revised second draft

Second draft was presented to the project review committee for review and critique in a two-day live-in meeting

Project staff incorporated suggestions from review committee into a third draft

Third draft presented to planning committee for critique and revision

Final version of third draft was written (field-test draft)

Planning committee field-tested instrumentation at four sites—two each in the northern and southern halves of the State; planning committee members worked with responsible persons at each site

Fourth draft of instrumentation was written based upon feedback from the field-test

Fourth draft presented to planning committee for review and critique

Project writer revised fourth draft based upon planning committee suggestions

Fourth draft and first draft of guide presented to the project review committee (state-wide body)

Revisions made in fourth draft of instrumentation and first draft of guide based upon suggestions from the review committee

Revised instrumentation and draft of guide presented to planning committee for review and critique

Instrumentation and guide accepted by the planning committee

What is contained in this guide, then, represents the material approved by the planning committee. In summary, the planning process consisted of several two-day and numerous one-day meetings involving nearly 75 people to ensure the widest possible review and study of this material. After each meeting, staff modified their work in accordance with the suggestions received and what gradually evolved was a program and set of evaluative instruments which are widely accepted and supported by practitioners in the field.

PART II

SELF-APPRAISAL/CERTIFICATION INSTRUMENTATION AND PROCEDURES

This section contains the self-appraisal/certification instrumentation and procedures developed in this project including:

1. The self-appraisal/certification instrumentation
2. The procedures for compiling the self-provided data on the above instrumentation
3. The suggested procedures to follow in obtaining certification

As of this writing, the length of time during which a resident outdoor environmental education program (ROEEP) will be certified has not been determined. Several factors will have an influence on this decision:

1. Legal requirements from future laws
2. Feedback from the field following extensive use of the guide
3. Acceptance of the guide by practitioners in the field
4. Costs involved in implementing the suggestions found in the guide
5. Availability of personnel for required visitations and committees.

Until the certification process has been followed and revised through actual use in many sites throughout the State, certification time-spans will be determined on an individual basis through mutual agreement among the State Department of Education, the Certification visitation team, and the ROEEP seeking certification. Should additional funds become available for resident outdoor environmental education programs in the State, standardized certification time-spans will then be determined.

1. RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAM (ROEEP) SELF-APPRAISAL/CERTIFICATION FORM

Directions to Respondents:

Because you have requested ROEEP Certification or indicated an interest in self-study, you are asked to complete the following form as completely and concisely as possible.

This form may be used for two purposes: 1) ROEEP Certification (making you eligible for possible future State funds), and 2) self-study to improve your program or to prepare for Certification.

Should you be seeking ROEEP Certification, completion of the entire form is necessary. Upon receipt of the completed form, the Consultant in Environmental Education in the State Department of Education will assemble a team of other ROEEP directors to visit your site and verify the information provided. Based upon their report, Certification will be granted or delayed until deficiencies are corrected. It should be remembered, however, that Certification is optional. It is only required if you want to be eligible for possible future State ROEEP funding.

Even though you may not desire ROEEP Certification at this time, you may want to use the Certification instrumentation (and procedures) for self-study.

By working together, it is hoped that the high quality of current programs may be maintained or improved.

RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAM (ROEEP)
SELF-APPRAISAL/CERTIFICATION FORM

PROGRAM AND SITE IDENTIFICATION INFORMATION

[If your Local Education Agency (LEA) operates more than one ROEEP site, fill out a separate form for each site. One per site plus one per program if more than one program at each site.]

1. Name of ROEEP site _____
2. Address or location of site _____
   _____
3. Telephone number of site _____
4. Name of LEA operating this site _____
5. Address of LEA operating this site _____
   _____
6. Telephone number of LEA operating this site _____
7. Name of person completing this form _____
8. Title _____
9. Date _____
10. Name of the person in charge on site _____
11. Title _____
12. This site is owned ☐ leased ☐ other ☐
    If other, please specify: _____
13. How many districts are served at this site? _____
14. How many schools are served at this site? _____
15. Estimated number of pupils to be served this year during regular school days _____
16. Do you operate any summer or weekend programs at this site? Yes ☐ No ☐
    If yes, give a brief description of such programs:

17. Total number of pupils served each year at this site _____

18. Number of days each year this site is used for ROEEP _____

19. What is the pupil sleeping capacity at your site? _____

20. How many pupils can you feed at your site at one setting? _____

21. The Resident Outdoor Environmental Education Program located at _____

_____ administered

by _____ has had a current inspection by the proper local regulatory agencies pertaining to Laws and Regulations of Organized Camps. Yes ☐ No ☐

22. Do you have a copy of the California "Laws and Regulations Relating to Organized Camps"* on site? Yes ☐ No ☐

23. California Administrative Code

(Title 17, Organized Camps, Sections 30700-30751)

(Note: These sections and articles are explained in detail in the document mentioned in Item 22 above. A copy of same is included with this questionnaire.)

		Inspection Date	Inspected*** By
Article 1. General	Yes ☐ No ☐ NA** ☐	_____	_____
Article 2. Utilities	Yes ☐ No ☐ NA ☐	_____	_____
Article 3. Housing	Yes ☐ No ☐ NA ☐	_____	_____
Article 4. Food Service Facilities and Operations	Yes ☐ No ☐ NA ☐	_____	_____
Article 5. Solid Waste	Yes ☐ No ☐ NA ☐	_____	_____
Article 6. Vector Control	Yes ☐ No ☐ NA ☐	_____	_____
Article 7. Swimming and Bathing	Yes ☐ No ☐ NA ☐	_____	_____
Article 8. Supervision	Yes ☐ No ☐ NA ☐	_____	_____

24. California Administrative Code; California Health & Safety Code

(Title 17, Sections 7774-7833, CHSC Sections 24100-24109)

Swimming Pools	Yes ☐ No ☐ NA ☐	_____	_____

*This publication is available in your County Health Office, from your local Public Health Regional Office, or from the State Department of Public Health, Sacramento, California.

**Not applicable.

***Agency and/or individual and title.

		Inspection Date	Inspected By
25. California Administrative Code (Title 19, State Fire Marshal Regulations, Sections 9.70-9.76, Article 9B, Group D)			
Division 4. Occupancies	Yes ☐ No ☐ NA ☐	_____	_____
26. California Administrative Code (Title 24, State Building Standards Commission, Sections 810.01-811.19 and Sections 1775.83-1775.93)			
Chapter 4, Article 10 Water Delivery Systems	Yes ☐ No ☐ NA ☐	_____	_____
Chapter 4, Article 11 Sewage Disposal	Yes ☐ No ☐ NA ☐	_____	_____
Chapter 17, Article 4 Drinking Water Supplies	Yes ☐ No ☐ NA ☐	_____	_____

27. If you answered no to any portion of items 23, 24, 25 or 26 above, use this space, or additional sheet(s), for detailed explanation.

ROEEP ENVIRONMENTAL PHENOMENA AREA DESCRIPTION

1. Describe the environmental setting in which the ROEEP is conducted (see Appendix A – Environmental Phenomena Area Descriptive Information)

   Geographical Location:

   Dominant Plant Community:

   Other Plant Communities (available for use in your ROEEP program):

2. Describe below the unique attributes of your "outdoor classroom" not adequately covered in Item 1 above (e.g., ponds, stream, tidepools, area impacted by man, etc.):

3. List below any areas you may use nearby that are not part of your owned or leased ROEEP land and give names of agency/agencies with whom you cooperate in the use of this land (i.e., parks, beaches, federal or state land, etc.):*

*Attach sheet for additional explanation.

EDUCATIONAL PROGRAM

1. Does the ROEEP have a published statement of outdoor environmental education philosophy?
   Yes ☐ No ☐

2. Briefly describe below how your ROEEP meets the criteria for valid Resident Outdoor Environmental Education Programs as found in Appendix D. Discuss how you meet each of the twelve criteria.

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

3. A ROEEP addresses pupil needs which cannot be met in the regular classroom. List below the specific and unique pupil needs to which your ROEEP is addressed:

4. Have your personnel covered by Stull Bill provisions met those requirements? Yes ☐ No ☐

5. Does your ROEEP have established pupil educational goals? Yes ☐ No ☐

6. If yes to the above, how were the goals determined?

   ☐ LEA Philosophy
   ☐ Assessed Pupil Needs
   ☐ Both of the Above
   ☐ Other (please specify) _____
   ☐ Not Applicable

7. Have measurable instructional pupil objectives been established for each goal of the ROEEP?
   Yes ☐ No ☐

8. Have you reviewed your goals and objectives during the past two years? Yes ☐ No ☐

9. Does your ROEEP have published curriculum guides? Yes ☐ No ☐

10. If yes to No. 9 above, briefly describe below how the curriculum guide(s) were developed and when:

11. If you answered yes to No. 9 above, who approves the curriculum guide(s)?

    _____

12. If you answered no to No. 9 above, describe briefly what you have in place of curriculum guide(s):

13. Are pre- and post-experience activities suggested to correlate the ROEEP with the regular classroom work? Yes ☐ No ☐

How is this accomplished?

14. Does your ROEEP have a systematic procedure for evaluation of:

Attainment of instructional objectives	Yes ☐	No ☐
Instructional staff	Yes ☐	No ☐
ROEEP administration	Yes ☐	No ☐
LEA administration	Yes ☐	No ☐

Other (please specify):_____

15. Does your ROEEP have a systematic procedure for evaluation from:

Regular classroom teachers	Yes ☐	No ☐
Pupil reaction	Yes ☐	No ☐
Parent reaction	Yes ☐	No ☐

Other (please specify):_____

16. How are pupils oriented to the ROEEP prior to the on-site educational experience?

☐ ROEEP staff member visit to classroom

☐ ROEEP description by regular classroom teacher

☐ Printed material

☐ Other (please describe):_____

17. Describe briefly the orientation program used to introduce pupils to the environment upon arrival at the site:

Social:

Physical:

Educational:

18. Do pupils have opportunities to select alternative activities within the established curricular framework? Yes ☐ No ☐

19. Does your ROEEP make special provisions for the unique needs of exceptional children? Yes ☐ No ☐

20. If yes to No. 19 above, describe briefly what you do:

EDUCATIONAL STAFF, FACILITIES AND RESOURCES

1. Identify below the numbers of instructional staff members you have on your site:

Certificated:		Number
	Administrators	_____
	Teachers	_____
	Other categories:	
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

Non-Certificated:	Categories:	Number
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

2. Do you have written job descriptions for all personnel including administrative, program, health and support services available for review? Yes ☐ No ☐
3. Do you have an up-to-date site organization chart available for reference? Yes ☐ No ☐
4. Describe briefly the involvement of the district classroom teacher in the activities of the ROEEP site:

5. Describe briefly the involvement of Federal, State, County, local and other agencies including volunteers in the educational activities of the ROEEP:

6. Identify briefly the facilities your site has available for pupil *instruction.* List the physical facilities, interest areas, natural classroom areas (i.e., museums, animal stations, orchards, etc.):

7. List the instructional equipment (i.e., microscopes, cameras, tools, etc.) you have available for your ROEEP:

8. Does the site have a separate budget? Yes ☐ No ☐

9. Does the overall program/programs have a separate budget? Yes ☐ No ☐

10. How would you improve your ROEEP if you had additional human or financial resources? Describe briefly what you would like to do.

STUDENT-CARE STAFF, FACILITIES, AND RESOURCES

1. List the numbers of operational staff on your site:

	Number
Kitchen	_____
Maintenance	_____
Custodial	_____
Other (please specify): _____	_____
_____	_____

2. Are basic menus planned or approved by a nutritionist or dietitian? Yes ☐ No ☐

3. Is a health history required of every pupil attending the ROEEP? Yes ☐ No ☐

4. Does your ROEEP or appropriate LEA maintain health records for a period of Federal statutory limits on every pupil attending? Yes ☐ No ☐

5. Do all ROEEP instructional staff members receive Red Cross First Aid Certificate training or its equivalent? Yes ☐ No ☐

6. Does the ROEEP have an infirmary or an area set aside as a first aid center? Yes ☐ No ☐

7. Does the ROEEP have any arrangements with an accredited hospital and/or a nearby physician for emergency medical care? Yes ☐ No ☐

8. Does your ROEEP have written emergency plans for the following?

Fire	Yes ☐	No ☐
Earthquake	Yes ☐	No ☐
Lost Child	Yes ☐	No ☐
First Aid	Yes ☐	No ☐
Disaster	Yes ☐	No ☐
Accident Prevention	Yes ☐	No ☐

9. Does your ROEEP have emergency transportation available at all times? Yes ☐ No ☐

10. Does the site have an emergency communication system? Yes ☐ No ☐
If yes, describe briefly:

STATEMENT OF COMPLIANCE

Visited by:

Date	Name	Title	LEA

Reviewed by:

	Local ROEEP Leader
	District or County Superintendent of Schools
	State Department of Education

Certified by:

	Certification Advisory Committee Representative
	California State Department of Education Consultant in Environmental Education

2. SUGGESTED PROCEDURES FOR COMPILING THE REQUIRED CERTIFICATION DATA

Should additional funds become available for resident outdoor environmental education programs, certification will be mandatory to determine eligibility for such funds. Even though categorical funds are not currently available, many local program personnel have requested certification as an indication of program quality.

Thus the following procedures for compiling the certification data are suggested. It should be remembered that these procedures are not mandatory in every case. Should the instrumentation be used for self-study only, these recommended procedures could function as guidelines; self-study might be considered when a program is not ready for certification.

Suggested Procedures:

Step One: Request Certification through the State Department of Education Consultant in Environmental Education.

Step Two: You will be sent the required Certification Form from the State Department of Education.

Step Three: Complete the required Certification Form. Should there be any questions regarding the information requested, contact the State Consultant for Environmental Education. Send the completed Certification Form to the State Consultant.

Step Four: Secure a date from the State Consultant for a Certification visit by qualified personnel as selected by the Consultant. The function of the visitation team will be threefold: 1) to verify the information you present on the Certification Form, 2) to share their personal perceptions of the strengths and areas of possible improvement in your ROEEP, and 3) to improve information dissemination state-wide through mutual visitations. Those to be selected as Certification visitors will be personnel from other resident outdoor environmental education programs in the State; this network of professionals in the same field visiting one another will improve information dissemination. It is recommended that the State Department of Education pay the visitation costs and the costs of training visitation personnel. In the absence of these funds, individual arrangements will have to be made to finance the visits. Should additional funding become available, money may be set aside to standardize the visitation procedure.

Suggested Procedure for Certifying a Resident Outdoor Environmental Education Program:

Once the Certification Form has been completed and returned to the State Department of Education, the Environmental Education Consultant will forward copies to the team members selected to visit a site. Before visiting a site, the team members will familiarize themselves with the data and otherwise prepare for the visitation. At least two persons from other resident outdoor environmental education programs will comprise the visitation team. To obtain certification, the following procedure is suggested. Individual circumstances may dictate variances from these recommended steps, but they are offered as guidelines:

Step One: The visitation team, after studying the completed Certification Form, will make a site visitation for a minimum of one day. During this visit, they will verify the information you have presented on the instrument, offer their perceptions, and share information. You should have available all of the documentation necessary to support the data you have presented on the completed form.

Step Two: Based upon the data supplied and its verification, the visitation team will write a report summarizing their findings and recommending certification or delay of certification until deficiencies are corrected. The report along with the Certification Form will be signed by the local ROEEP leader, the visitation team members, the appropriate county or district superintendent of schools, and the State Department of Education representative.

Step Three: The Certification Form and the visitation report will be sent to the State Department Consultant for Environmental Education. They will be submitted to an advisory committee of representative residential outdoor environmental education program personnel who will grant or delay certification.

The above outline represents the thinking of the planning committee, but is subject to revision in individual cases.

PART III

APPENDIXES

INTRODUCTION TO THE APPENDIXES

The appendixes included in the guide serve several purposes. The first four items–A, B, C and D–relate directly to the Certification process. The others are included for informational purposes, with the exception of Appendix I. This appendix suggests guidelines for training members of the projected visitation teams. Each appendix is briefly annotated below:

Appendix A – Environmental Phenomena Area Descriptive Information

This appendix is directly related to the information requested on the Certification Form as found on page 10. It is intended to provide a uniform state-wide method of classifying environmental study areas. The material in Appendix A is used to complete this section of the form. The directions for its use are found on the first page of the appendix.

Appendix B – Resident Outdoor Environmental Education Program Opinion Questionnaire

Some members of the project review committee suggested that it would be helpful to have some opinion data from members of their staff relative to their own ROEEP. This questionnaire was developed to fulfill this request. While it has no formal connection with the certification process, it may provide some useful data for those programs choosing to use it.

Appendix C – Definition of Terms

This appendix is included to provide uniformity of meaning for those terms deemed necessary by the project planning committee.

Appendix D – Criteria for Resident Outdoor Environmental Education Programs

In order to determine program eligibility for possible future funding, the evaluative criteria presented are recommended.

Appendix E – Sample Budget Outline

This outline is included as an aid to those beginning a new ROEEP.

Appendix F – Sample Schedules and Forms of Residential Outdoor Environmental Education Programs

For the guidance of those initiating new programs, these forms are representative of those used in existing programs.

Appendix G – Sample Evaluation Forms

These serve the same purposes as identified in Appendixes E and F above.

Appendix H – Suggested Outline for Organizing a Resident Outdoor Environmental Education Program

This appendix presents two flow-block diagrams which show the step-by-step procedures for initiating new ROEEP programs.

Appendix I – Suggested Guidelines for Training Future Certification Visitors

When the certification process is implemented and visitation teams are used, it will be necessary to provide training for those personnel. These training guidelines were developed by Dr. William Hammerman, Professor of Education, California State University at San Francisco.

APPENDIX A

ENVIRONMENTAL PHENOMENA AREA DESCRIPTIVE INFORMATION

California's diverse ecological phenomena have presented considerable problems to workers in their attempt to describe and classify these phenomena. Early attempts utilized the life zone concept introduced around the turn of the century. The life zone concept is now generally regarded as inadequate to describe the wide range in environmental phenomena, both spatially and in variety.

For purposes of defining the setting in which Resident Outdoor Environmental Education programs are conducted, it is suggested that such programs utilize the concept of plant communities introduced by Philip A. Munz and David D. Keck in 1949. Their classification system is now generally accepted by most workers in the field. The classification system that follows is based on the work of Munz and Keck (1959) and is adapted to the needs of resident outdoor environmental education programs. Use of this classification system has distinct advantages over other systems. It is generally recognized as the best system available, it is scientifically sound and it moves all programs and educators toward "speaking the same language."

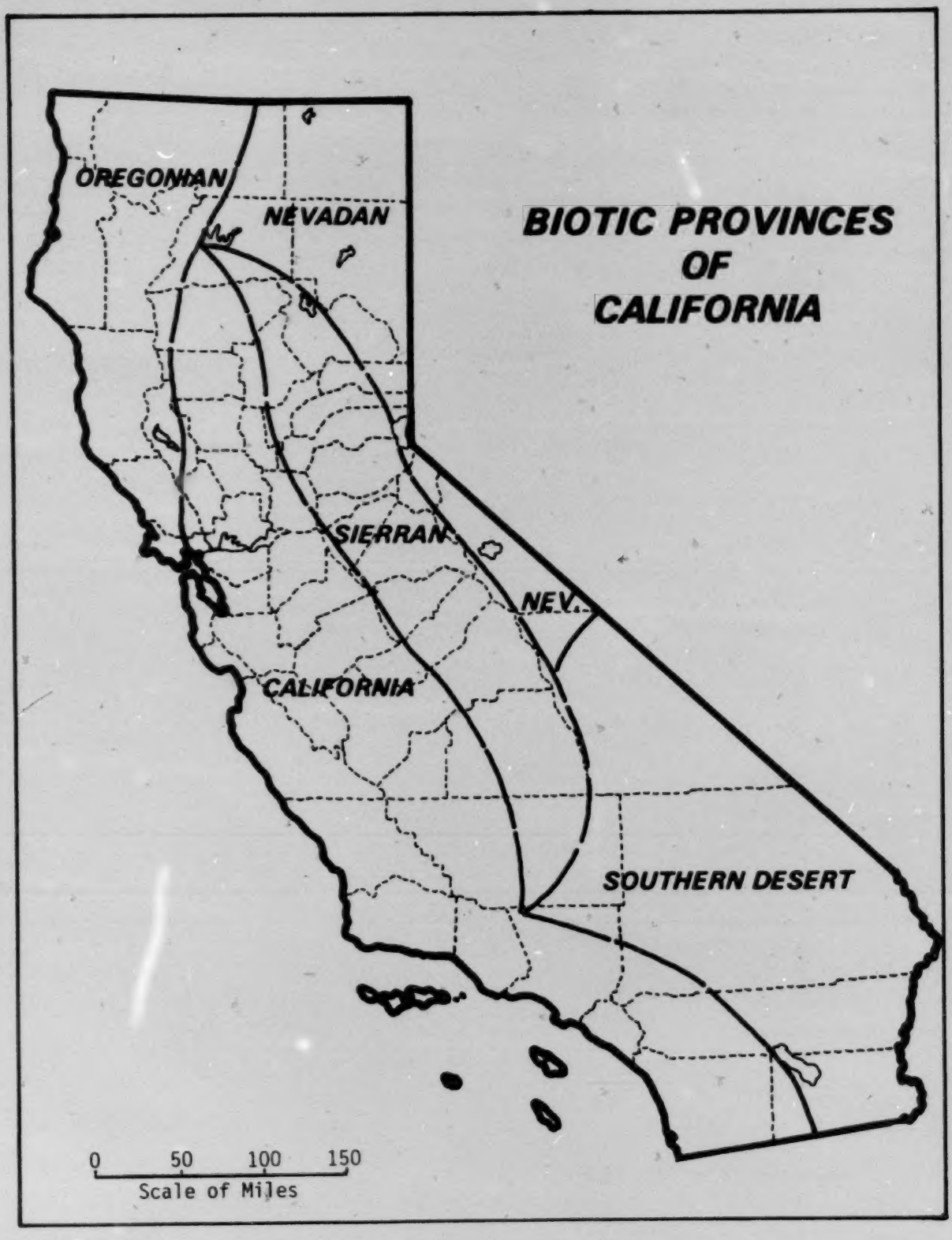
HOW TO USE:

Locate your ROEEP site on the map of California Biotic Provinces (Figure 1). Use the chart of California Plant Communities (Table 1) to identify the dominant vegetation types for that biotic province in which your site is located. After determining the vegetation type, identify the characteristic plant community using the descriptions of the plant communities that follow.

It is more than likely that your site has available for use in your education program other plant communities or other plant associations. It is also quite possible that your site is located in an area that shows an overlap of plant communities because plants do not follow divisions imposed by a classification system. For example, a site located in an area that is dominantly a chaparral plant community could contain an all-year stream through the site. You may use that riparian community in your program. Further, it may be possible to walk to an area that is a closed-cone forest and walk in another direction to a southern oak woodland. Your program may also include regular trips, perhaps by bus, to the seashore or a salt-marsh for study.

There may be areas used in your educational program not described by the classification scheme. Your program might include the use of areas for study such as ponds, tidepools, old logging locations, areas impacted by man, or even natural disasters such as fire.

The descriptions of biotic provinces, vegetation types and the 29 plant communities are adapted largely from Munz and Keck (1959). The list of characteristic species for each plant community was developed from Munz and Keck (1959) and Ornduff (1974).



[1]Boundary lines between provinces are approximate.
[2]Map by Arie Korporaal, Office of the Los Angeles County Superintendent of Schools.

Figure 1.

Table 1. California Plant Communities

BIOTIC PROVINCE	VEGETATION TYPE	PLANT COMMUNITY
A. OREGONIAN	I. STRAND	1. Coastal Strand
	II. SALT MARSH	2. Coastal Salt Marsh
	III. FRESHWATER MARSH	3. Freshwater Marsh
	IV. SCRUB	4. Northern Coastal Scrub
		5. Coastal Sage Scrub
		6. Sagebrush Scrub
		7. Shadscale Scrub
		8. Creosote Bush Scrub
		9. Alkali Sink
	V. CONIFEROUS FOREST	10. North Coastal Coniferous Forest
		11. Closed-cone Pine Forest
		12. Redwood Forest
		13. Douglas-Fir Forest
		14. Yellow Pine Forest
		15. Red Fir Forest
		16. Lodgepole Forest
		17. Subalpine Forest
		18. Bristlecone Pine Forest
	VI. MIXED EVERGREEN FOREST	19. Mixed Evergreen Forest
B. CALIFORNIAN	I. STRAND	1. Coastal Strand
	II. SALT MARSH	2. Coastal Salt Marsh
	III. FRESHWATER MARSH	3. Freshwater Marsh
	IV. SCRUB	4. Northern Coastal Scrub
		5. Coastal Sage Scrub
		6. Sagebrush Scrub
		7. Shadscale Scrub
		8. Creosote Bush Scrub
		9. Alkali Sink
	VII. WOODLAND-SAVANNA	20. Northern Oak Woodland
		21. Southern Oak Woodland
		22. Foothill Woodland
	VIII. CHAPARRAL	23. Chaparral
	IX. GRASSLAND	24. Coastal Prairie
		25. Valley Grassland
C. SIERRAN	V. CONIFEROUS FOREST	10. North Coastal Coniferous Forest
		11. Closed-cone Pine Forest
		12. Redwood Forest
		13. Douglas-Fir Forest
		14. Yellow Pine Forest
		15. Red Fir Forest
		16. Lodgepole Forest
		17. Subalpine Forest
		18. Bristlecone Pine Forest
	X. ALPINE FELL-FIELDS	26. Alpine Fell-Fields
D. NEVADAN	IV. SCRUB	4. Northern Coastal Scrub
		5. Coastal Sage Scrub
		6. Sagebrush Scrub
		7. Shadscale Scrub
		8. Creosote Bush Scrub
		9. Alkali Sink
	XI. DESERT WOODLAND	27. Northern Juniper Woodland
		28. Pinyon-Juniper Woodland
		29. Joshua Tree Woodland
E. SOUTHERN DESERT	IV. SCRUB	4. Northern Coastal Scrub
		5. Coastal Sage Scrub
		6. Sagebrush Scrub
		7. Shadscale Scrub
		8. Creosote Bush Scrub
		9. Alkali Sink
	XI. DESERT WOODLAND	27. Northern Juniper Woodland
		28. Pinyon-Juniper Woodland
		29. Joshua Tree Woodland

[1] Adapted and modified from Munz and Keck (1959) by Arie Korporaal, Office of the Los Angeles County Superintendent of Schools.

BIOTIC PROVINCES OF CALIFORNIA

Considerations of the biotic provinces present in California reveal the relationship of the flora of one area to that of others both within and without the state. A biotic province covers a large and continuous geographic area characterized by the occurrence of one or more important ecological associations that differ, at least in proportional area covered, from the associations of adjacent provinces. Generally, biotic provinces are characterized also by peculiarities of vegetation type, ecological climax, flora, fauna, climate, physiography, and soil. Such biotic provinces are the result of the interaction of past and present forces, those of the geological history as well as present climatic and edaphic influences. Each such province includes several vegetation types and plant communities.

A. *Oregonian* applies to the cool moist coastal strip extending southward to San Francisco Bay and with small elements in Monterey County. It is the southern limit for many species of north coastal distribution.

B. *Californian* are those portions of California west of the Sierra Nevada and the southern mountains, thus including the interior valleys and their surrounding hills in the central and northern parts of the state, as well as the southern coastal area and Coast Ranges south of San Francisco Bay. It reaches its southern limit in northern Baja California. There is much endemism, considerable Mexican influence, and a marked similarity in some genera and species to the temperate parts of Chile and Peru. There is much diversity in climate, but the rains are almost entirely in the winter, with a very long dry summer season.

C. *Sierran* is the great montane area which runs interruptedly from southern Oregon through Mount Shasta, the Sierra Nevada, Tehachapi Mountains, San Gabriel, San Bernardino, San Jacinto and Cuyamaca ranges to the San Pedro Martir of Baja California. It begins with the yellow pine belt and extends to the summits of the mountains. In its lower and middle elevations there is a large floral element derived from the surrounding lowlands. There is also much endemism. Only at the higher altitudes are found the widespread boreal species that occur with greater frequency in other ranges like the Cascades and the Rocky Mountains. This is a region of winter snow and some summer rain.

D. *Nevadan* occurs east of the Cascade-Sierran axis from Owens Valley northward. Some elements get into Siskiyou County. The lower plains are covered with Sagebrush (*Artemisia tridentata*), but there are interrupted mountain ranges with some forest and woodland. Historically the general affinity is to the east and south. The winters are cold, the summers hot. Precipitation is relatively light, mostly coming as winter snow.

E. *Southern Desert* – While the Mojave and Colorado deserts are very different in many respects, they are considered together here, since the Creosote Bush Scrub occupies the largest single area in both. There is decided affinity with the flora to the southeast. The deserts are known not only for their dryness, but also for the diurnal and seasonal temperature extremes.

VEGETATION TYPES

The vegetation of an area is often thought of in terms of structural units into which the vegetation can be divided. The major types are described in the terms that, in most cases, convey an immediate impression of the flora in the area under discussion. The major vegetation types are often obvious, such as grassland, woodland, chaparral, marsh, and the like. Munz and Keck (1959), recognize the following major vegetation types: I. Strand; II. Salt Marsh; III. Freshwater Marsh; IV. Scrub; V. Coniferous Forest; VI. Mixed Evergreen Forest; VII. Woodland-Savanna; VIII. Chaparral; IX. Grassland; X. Alpine Fell-fields; and XI. Desert Woodland. The names that are not self-explanatory are made clear by the discussion under Communities.

PLANT COMMUNITIES

The term "community" is used here to describe ecological units or regional elements of the vegetation that is characterized by the presence of certain dominant species. This description of a plant community, consistent with Munz and Keck (1959), means the community is floristically determined. The majority of California communities have a climatic rather than an edaphic (influenced by the soil) basis. Most of these can be divided into fairly distinct smaller groups and are not necessarily uniform communities. A few communities that have an edaphic basis include the strand, marsh and saline groups. In these cases the vegetation type and community are the same.

CALIFORNIA PLANT COMMUNITIES

For each of the plant communities (after Munz and Keck, 1959) is a list of characteristic species, a statement as to distribution and type of area covered, pertinent climatic data, and a brief description of the general appearance of the vegetation.

1. COASTAL STRAND

Lupine	*Lupinus* spp.
Sand Verbena	*Abronia* sp.
Beach Primrose	*Carmissonia oenothera cheiranthifolia*
Saltbush	*Atriplex leucophylla*
Silver Beachweed	*Ambrosia chamissonis*

Sandy beaches and dunes scattered along the entire coast. Annual rainfall is 15 to 70 inches, with much fog and wind; growing season is 12 months with 350 to 365 frost-free days; small seasonal and diurnal fluctuations in temperature; mean summer maxima 61-72°, mean winter minima 39-47°.

Vegetation is low or prostrate, often succulent, late flowering. The constitution of this community varies considerably from north to south; some species reaching their southern limit at Cape Mendocino, some at Monterey Peninsula, and some at Point Conception. A number of others, however, show the continuity of the community by extending the entire length of the state and beyond.

2. COASTAL SALT MARSH

Salt Grass	*Distichlis spicata*
Pickleweed	*Salicornia* spp.
Frankenia	*Frankenia grandifolia*
Seep Weed	*Suaeda californica*

Salt marshes, along the coast, from sea level to 10 feet. Average rainfall 15 to 40 inches; growing season 12 months, with 330 to 365 frost-free days; small seasonal and diurnal fluctuations in temperature; range about as in Coastal Strand.

Most extensive on tidelands.

3. FRESHWATER MARSH

Sedge	*Carex* spp.
Bulrush or Tule	*Surpus* spp.
Cattail	*Typha* spp.

Marshes of interior valleys such as near Tulare Lake, river-bottom lagoons, and near coast back of immediate salty areas, from sea level to about 500 feet.

Climatic conditions variable, but growing season is long and physical conditions are relatively constant.

4. NORTHERN COASTAL SCRUB

Pearly Everlasting	*Anaphalis margaritacea*
Suksdorf's Sagebrush	*Artemisia suksdorfii*
Coyote Brush, Chaparral Broom	*Baccharis pilularis* var. *consanguinea*
Seaside Daisy	*Erigeron glaucus*
Coastal Eriogonum	*Eriogonum latifolium*
Seaside Woolly Sunflower	*Eriophyllum staechadifolium*
Salal	*Gaultheria shallon*
Cow Parsnip	*Heracleum lanatum*
California Blackberry	*Rubus vitifolius*

Narrow coastal strip from southern Oregon to San Mateo County and from Pacific Grove to Point Sur, lying between the Coastal Strand and the Redwood Forest at elevations mostly below 500 feet.

Annual rainfall 25 to 75 inches, with much fog and wind; growing season 10 to 12 months, with 300 to 350 frost-free days; little fluctuation in temperature, mean summer maxima 63-75°, mean winter minima 35-40°F.

Rather low plants rarely over 6 feet in height, sometimes dense, but often with extensive area of grass between.

5. COASTAL SAGE SCRUB

Coastal Sagebrush	*Artemisia californica*
Coyote Brush, Chaparral Broom	*Baccharis pilularis* var. *consanguinea*
Wild Buckwheat	*Eriogonum fasciculatum*
Poison Oak	*Rhus diversiloba*
Lemonadeberry	*Rhus integrifolia*
Purple or White-Leaved Sage	*Salvia leucophylla*
Black Sage	*Salvia mellifera*

Annual rainfall 10 to 20 inches; growing season 8 to 12 months, with 230 to 350 frost-free days; mean summer maximum temperatures 68-90°, mean winter minima 37-48°F.

Plants half-shrubs, 1 to 5 feet tall, or somewhat woodier and larger, forming a more open community than chaparral.

6. SAGEBRUSH SCRUB

Basin Sagebrush	*Artemisia tridentata*
Saltbush	*Atriplex* spp.
Rabbit Brush	*Chrysothamnus nauseosus*
Blackbush	*Coleogyne ramosissima*
Antelope Brush	*Purshia* spp.
Cotton Thorn	*Tetradymia* spp.

Deep pervious soil along the east base of the Sierra Nevada from Modoc County south to the San Bernardino Mountains, mostly at elevations of 4,000 to 7,500 feet; occasional in Siskiyou and San Diego counties.

Average precipitation 8 to 15 inches mostly as winter snow; growing season 3.5 to 6 months, with 70 to 130 frost-free days; mean summer maximum temperatures 83-95°, mean winter minima 8-27°F.

Low, silvery gray shrubs 2 to 7 feet tall, interspersed with greener plants.

7. SHADSCALE SCRUB

Spiny Sagebrush	*Artemisia spinescens*
Saltbush, Shadscale	*Atriplex* spp.
Blackbush	*Coleogyne ramosissima*
Mormon Tea	*Ephedra* spp.
Winter Fat	*Eurotia lanata*
Hop Sage	*Grayia spinosa*
Matchweed	*Gutierrezia* spp.
Cheese Bush	*Hymenoclea salsola*

In heavy soil, often with underlying hardpan, of mesas and flats at 3,000 to 6,000 feet around the Mohave Desert, Owens Valley, etc.

Average rainfall 3 to 7 inches; growing season limited by water; frost-free days 150 to 250; temperatures similar to those in Joshua Tree Woodland.

Plants largely 1 to 1.5 feet tall, shallow-rooted, and covering large monotonous areas between Creosote Bush Scrub and Joshua Tree Woodland.

8. CREOSOTE BUSH SCRUB

Brittle Bush	*Encelia farinosa*
Ocotillo	*Fouquieria splendens*
Burro Weed	*Franseria dumosa*
Cheese Bush	*Hymenoclea salsola*
Creosote Bush	*Larrea divaricata*
Cholla, Prickley Pear	*Opuntia* spp.

Well-drained soil of slopes, fans, and valleys, usually below 3,500 feet, in deserts from southern end of Owens Valley to Mexico.

Average rainfall mostly 2 to 8 inches, some as summer showers; frost-free days 180 to 345; highly variable seasonal and diurnal temperatures, mean summer maxima 100-110°, mean winter minima 30-42°F.

Shrubs 2 to 10 feet tall, widely spaced, largely dormant between rainy periods.

9. ALKALI SINK

Iodine Bush	*Allenrolfea occidentalis*
Saltbush	*Atriplex* spp.
Pickleweed	*Salicornia* spp.
Greasewood	*Sarcobatus vermiculatus*
Seep Weed	*Suadea* spp.

Poorly drained alkaline flats and playas in floor of Great Central Valley and of arid regions east of the Sierra Nevada, and in such sinks as Panamint and Death valleys, mostly at less than 4,000 feet elevation.

Average rainfall 1.5 to 7 inches; frost-free days 200 to 335; highly variable seasonal and diurnal temperatures, mean summer maxima 106-116°, mean winter minima 28-37°F.

Low scattered gray or fleshy halophytes where there is poor or no drainage, as about dry lakes; under this community there are grouped several associations which are perhaps more distinct and cover larger areas in the deserts of Nevada and Utah.

10. NORTH COASTAL CONIFEROUS FOREST

Canoe or Western Red Cedar	*Thuja plicata*
Western Hemlock	*Tsuga heterophylla*
Sitka Spruce	*Picea sitehensis*
Douglas Fir	*Pseudotsuga menziesii*
Lowland or Grand Fir	*Abies grandis*
Lawson Cypress, Port Orford Cedar	*Chamaecyparis lawsoniana*
Vine Maple	*Acer circinatum*

Outer North Coast Range, Mendocino County northward, from near sea-level up to 1,000 feet or more; in occasional restricted patches as far south as Sonoma County.

Average rainfall 40 to 110 inches, with frequent dense fogs; growing season 8 to 12 months, with 225 to 360 frost-free days; temperature mild and equable; mean summer maxima 62-70°, mean winter minima 38-42°F.

Trees 150 to 200 feet tall or more; the forest dense and continuous, often with much undergrowth. Of increasing importance northward through Oregon and Washington.

11. CLOSED-CONE PINE FOREST

Cypress	*Cupressus* spp.
Beach Pine	*Pinus contorta*
Bishop Pine	*Pinus muricata*
Monterey Pine	*Pinus radiata*
Associated Species:	
Coyote Brush, Chaparral Broom	*Baccharis pilularis* var. *consanguinea*
Manzanita	*Arctostaphylos* spp.
Coast Live Oak	*Quercus agrifolia*
Wax Myrtle	*Myrica californica*
Bracken Fern	*Pteridium aquilinum*
Coffeeberry	*Rhamnus californica*
Poison Oak	*Rhus diversiloba*
California Huckleberry	*Vaccinium ovatum*

Interrupted forest from Mendocino plains southward near the immediate coast to Santa Barbara County, from near sea level to 1,200 feet. Northward it is on the seaward side of the redwoods in barren soils.

Average rainfall 20 to 60 inches, much fog; growing season 9 to 12 months, with 270 to 360 frost-free days; climate cool with temperatures comparable with those in the Redwood Forest.

Trees 30 to nearly 100 feet tall, in a relatively dense forest.

12. REDWOOD FOREST

Redwood	*Sequoia sempervirens*
Douglas Fir	*Pseudotsuga menziesii*
Tanbark Oak	*Lithocarpus densiflora*
California Huckleberry	*Vaccinium ovatum*
Redwood Sorel	*Oxalis oregana*
Sword Fern	*Polystichum munitum*
Wax Myrtle	*Myrica californica*
Salal	*Gaultheria shallon*
California Rose Bay	*Rhododendron macrophyllum*

Seaward slopes of outer Coast Ranges, 10 to 2,000 feet (even to 3,000 feet in Santa Lucia Mountains), from Del Norte County and adjacent Oregon to Santa Cruz County, with outliers along the coast of central Monterey County.

Average rainfall 35 to 100 inches, with dense dripping fog in dry season; growing season 6 to 12 months, with 200 to 350 frost-free days; not much change in temperature diurnally or seasonally, the mean summer maxima 68-84°, the mean winter minima 33-40°F.

Trees very tall, even to 350 feet, in a heavy, dense forest.

13. DOUGLAS-FIR FOREST

Douglas Fir	*Pseudotsuga menziesii*
Tanbark Oak	*Lithocarpus densiflora*
Madrone	*Arbutus menziesii*
Giant Chinquapin	*Chrysolepis (Castanopsis) chrysophylla*
Sugar Pine	*Pinus lambertiana*

North Coast Ranges from Mendocino County northward, scattered remnants southward to Sonoma and Marin counties, mostly east of the Redwood Forest and to elevations of 4,500 feet, but in some places reaching almost to the coast.

Climatic data much as for Mixed Evergreen Forest.

Trees to 200 feet high, in dense forests often of pure stands of *Pseudotsuga*. Apparently best developed on east and north slopes in California. Common northward to British Columbia.

14. YELLOW PINE FOREST

Ponderosa Pine	*Pinus ponderosa*
Sugar Pine	*Pinus lambertiana*
White Fir	*Abies concolor*
Douglas Fir	*Pseudotsuga menziesii*
California Black Oak	*Quercus kelloggii*
Currant, Gooseberry	*Ribes* spp.
Thimble Berry	*Rubus parviflorus*
Mountain Misery	*Chamaebatia foliolosa*
Manzanita	*Arctostaphylos* spp.
California Lilac	*Ceanothus* spp.

North Coast Ranges, 3,000 to 6,000 feet; northern California, 1,200 to 5,500 feet; Sierra Nevada, 2,000 to 6,500 or 7,000 feet; southern California, 5,000 to 8,000 feet.

Average precipitation 25 to 80 inches, partly as snow; growing season 4 to 7 months, with 90 to 210 frost-free days; mean summer maximum temperatures 80-93°, mean winter minima 22-34°F.

Trees 75 to 200 feet tall, in extensive, continuous forests.

15. RED FIR FOREST

Red Fir	*Abies magnifica*
Lodgepole Pine	*Pinus murrayana*
Western White Pine	*Pinus monticola*
Jeffrey Pine	*Pinus jeffreyi*
Chinquapin	*Chrysolepis (Castanopsis) sempervirens*
Snow Bush	*Ceanothus cordulatus*
Quaking Aspen	*Populus tremuloides*

Above 6,000 feet in North Coast Ranges; northern California, 5,500 to 7,500 feet; Sierra Nevada, 6,000 to 9,000 feet; southern California, 8,000 to about 9,500 feet.

Average precipitation 35 to 65 inches, with heavy winter snow; growing season 3 to 4.5 months, with 40 to 70 frost-free days; mean summer maximum temperatures 73-85°, mean winter minima 16-26°F.

Trees to 100 feet tall or more, in dense forests.

16. LODGEPOLE FOREST

Lodgepole Pine	*Pinus murrayana*
Mountain Hemlock	*Tsuga mertensiana*
Sagebrush	*Artemisia* spp.
Bristlewood	*Haplopappus* spp.

Northernmost California to central Sierra Nevada, where it grows from about 8,300 to 9,500 feet.

Average precipitation about 30 to 60 inches, mostly as snow; growing season 9 to 14 weeks, with frost-free days as many as 40; mean summer maximum temperatures 67-75°, mean winter minima 10-18°F.

Trees to 50 to 60 feet tall, in rather open forest with extensive meadows scattered through it.

17. SUBALPINE FOREST

Whitebark Pine	*Pinus albicaulis*
Foxtail Pine	*Pinus balfouriana*
Limber Pine	*Pinus flexilis*
Lodgepole Pine	*Pinus murrayana*
Mountain Hemlock	*Tsuga mertensiana*
Willow	*Salix* spp.
Wild Buckwheat	*Eriogonum* spp.
Currant	*Ribes* spp.
Red Heather	*Phyllodoce breweri*
Penstemon	*Penstemon* spp.

The most boreal forest in California; in northern California from about 8,000 to 9,500 feet; Sierra Nevada, 9,500 to 11,000 feet; poorly represented in southern California and above 9,500 feet.

Average precipitation about 30 to 50 inches, dropping as low as 15 inches on the east side of the crest, mostly as snow, with heavy snow cover in winter; growing season 7 to 9 weeks, and killing frost possible in every month; mean summer maximum temperatures probably not over 65°F, winter minima unknown.

Trees from elfin wood (Krummholz) to 40 feet tall or more, usually rather scattered.

18. BRISTLECONE PINE FOREST

Bristlecone Pine	*Pinus aristata*
Limber Pine	*Pinus flexilis*
Mountain Mahogany	*Cercocarpus ledifolius*
Bristlewood	*Haplopappus* spp.
Penstemon	*Penstemon* spp.
Sagebrush	*Artemisia* spp.

Inyo-White Mountains, Panamint Mountains, Funeral and Grapevine mountains of Mono and Inyo counties, at 8,500 to 11,500 feet, occasionally as low as 7,200 feet.

Precipitation data available for a three-year period only and ranged from 10 to 22 inches with average of 15. Snowfall averaged 129 inches. Frost-free days from 50 to 90; mean summer maximum temperatures 50-66°, mean winter minima 3-21°F.

Open forest of trees 15 to 40 feet high, on more or less brushy and rock slopes.

19. MIXED EVERGREEN FOREST

Tanbark Oak	*Lithocarpus densiflora*
Madrone	*Arbutus menziesii*
Douglas Fir	*Pseudotsuga menziesii*
Giant Chinquapin	*Chrysolepis (Castanopsis) chrysophylla*
California Bay	*Umbellularia californica*
Bigleaf Maple	*Acer macrophyllum*
Canyon Oak	*Quercus chrysolepis*
Black Oak	*Quercus kelloggii*
California Hazelnut	*Corylus cornuta* var. *californica*
Mountain Dogwood	*Cornus nuttallii*
California Lilac	*Ceanothus* spp.

Along inner edge of the Redwood Forest and on higher hills within it, mostly in the North Coast Ranges, but as far south as the Santa Cruz Mountains and the north side of the Santa Lucia Mountains, at elevations of 200 to 2,500 feet.

Average rainfall 25 to 65 inches, with some fog; growing season 7 to 11 months, with 200 to 300 frost-free days; mean summer maximum temperatures 75-90°, mean winter minima 29-39°F.

Trees to 100 feet or more tall, in rather close stands, often with brush beneath and with grassland islands referable to Coastal Prairie. Many members of this community, which fraternize with the Redwood, also enter the Yellow Pine Forest as important constituents, even accompanying it from the Coast Ranges to Mt. Shasta and well southward along the Sierra Nevada.

20. NORTHERN OAK WOODLAND

Oregon or Garry Oak	*Quercus garryana*
Black Oak	*Quercus kelloggii*
Canyon Oak	*Quercus chrysolepis*
Interior Live Oak	*Quercus wislizenii*
Bigleaf Maple	*Acer macrophyllum*
California Buckeye	*Aesculus californica*
Manzanita	*Arctostaphylos* spp.

North Coast Ranges from Humboldt and Trinity counties as far south as Napa County and inland from the Redwood Forest to the Yolla Bolly Mountains, ascending to 3,000 or even 5,000 feet.

Average rainfall 25 to 40 inches; growing season 6 to 9 months, with 180 to 265 frost-free days; mean summer maximum temperatures 80-94°, and mean winter minima 31-38°F.

Trees 25 to 75 feet tall, in rather open woodland with little undergrowth.

21. SOUTHERN OAK WOODLAND

Coast Live Oak	*Quercus agrifolia*
Engelmann Oak	*Quercus engelmannii*
Southern California Walnut	*Juglans californica*
Lemonade Berry	*Rhus integrifolia*
Sugar Bush	*Rhus ovata*

Valleys of interior southern California from Los Angeles County to San Diego County and ascending to about 5,000 feet at Vandeventer Flat in the San Jacinto Mountains.

Average rainfall 15 to 25 inches, often of torrential type with rapid runoff; growing season 7 to 10 months, with 200 to 350 frost-free days; mean summer maximum temperatures 84-92°, mean winter minima 32-44°F.

Trees 20 to 60 feet tall, with grassland or few soft shrubs between them.

22. FOOTHILL WOODLAND

Digger Pine	*Pinus sabiniana*
Coulter Pine (in upper parts)	*Pinus coulteri*
Blue Oak	*Quercus douglasii*
Canyon Oak	*Quercus chrysolepis*
Coast Live Oak	*Quercus agrifolia*
Interior Live Oak	*Quercus wislizenii*
Valley Oak	*Quercus lobata*
California Bay	*Umbellularia californica*
California Buckeye	*Aesculus californica*
Coffeeberry	*Rhamnus californica*
Wild Lilac	*Ceanothus* spp.

Foothills and valley borders, 400 to 3,000 feet, fingering upward on warm slopes to 5,000 feet; Inner Coast Ranges, Trinity County to Santa Barbara County; western foothills of the Sierra Nevada, reaching southern limit in northwestern Los Angeles County.

Average rainfall 15 to 40 inches, little or no fog; growing season 6 to 10 months, with 175 to 310 frost-free days; hot dry summers, with mean maximum temperatures 75-96°, and mean winter minima 29-42°F.

Trees 15 to 70 feet tall, in dense or open woodland, with scattered brush and grassland between the trees. This composite community contains both the oak parklands of the valley floors and the digger pine woodland of the surrounding slopes.

23. CHAPARRAL

Chamise, Greasewood	*Adenostoma fasciculatum*
California Holly, Toyon	*Heteromeles arbutifolia*
Coffeeberry	*Rhamnus californica*
Scrub Oak	*Quercus dumosa*
Mountain Mahogany	*Cercocarpus betuloides*
Yucca, Spanish Bayonet	*Yucca whipplei*
Holly-leaf Cherry	*Prunus ilicifolia*
Wild Lilac	*Ceanothus* spp.
Manzanita	*Arctostaphylos* spp.
Poison Oak	*Rhus diversiloba*
Laurel Sumac	*Rhus laurina*

Dry slopes and ridges in Coast Ranges from Shasta County south, and below the Yellow Pine Forest on the western slopes of the Sierra Nevada and more southern mountains. Rocky, gravelly, or fairly heavy soils.

Average rainfall 14 to 25 inches; hot dry summers and cool but not cold winters; growing season 8 to 12 months, with 250 to 360 frost-free days; mean summer maximum temperatures 82-94°, mean winter minima 29-45°F.

A broad-leaved sclerophyll type of vegetation, 3 to 6 or 10 feet high and dense, often nearly impenetrable. Very subject to fire, following which many of the shrubs tend to stump-sprout.

24. COASTAL PRAIRIE

Various genera of grasses	
Golden Aster	*Chrysopsis villosa* var. *bolanderi*
Douglas Iris	*Iris douglasiana*
Bracken Fern	*Pteridium aquilinum*
Yellow Mats	*Sanicula arctopoides*

Open temperature hill-grasslands or glades or bald hills; west slopes of outer and middle Coast Ranges from Mendocino and Trinity counties northward and as scattered patches south to San Francisco Bay. Occurring mostly below 4,000 feet.

Climatic data much as for Northern Oak Woodland.

Originally bunch grasses with various flowering herbs; now partly superseded by annual introduced weedy grasses. Sometimes divided into a coastal strip, where there is intergradation with our Northern Coastal Scrub, and hill prairie or the open hill grasslands. Since both occur fairly near the coast and have largely the same species, we are keeping these "temperate grasslands" of northern affinities as one community and separate from the more interior Valley Grassland community of more southern relationships.

25. VALLEY GRASSLAND

Native:	
Three-Awn	*Aristida* (many species)
Bunch Grass	*Poa* (many species)
Needle Grass	*Stipa* (many species)
Introduced:	
Wild Oats	*Avena* (many species)
Brome Grass	*Bromus* (many species)
Fescue	*Festuca* (many species)

Great Central Valley and low hot valleys of Inner Coast Ranges, such as Salinas and San Benito valleys, Antelope Valley; ascending to about 4,000 feet in Tehachapi Mountains and eastern San Diego County; along the coast from San Luis Obispo County south.

Average rainfall 6 to 20 inches; growing season 7 to 11 months, with 205 to 325 frost-free days; mean maximum summer temperatures 88-102°, mean winter minima 32-38°F.

Subtropical type of open treeless grassland, with winter rain and hot dry summers; rich display of flowers in wet springs. Local habitats, such as "hog-wallows," with distinctive floras.

26. ALPINE FELL-FIELDS

Many species of perennial herbs and dwarf woody plants.

Above tree growth; northern California mostly above 9,500 feet; Sierra Nevada mostly above 10,500 feet; San Bernardino and San Jacinto mountains with bare suggestions on highest peaks.

Average precipitation about 25 to 35 inches, predominantly as snow; swept by gales in winter with deep drifts of snow accumulating locally; growing season 4 to 7 weeks and killing frost possible at any time; intense illumination; mean summer maximum temperatures probably not over 55-60°F, winter minima unknown.

Almost entirely perennial herbs, scattered or forming low turf, or among rocks; many cushion plants.

27. NORTHERN JUNIPER WOODLAND

Sierra Juniper	*Juniperus occidentalis*
Jeffrey Pine	*Pinus jeffreyi*
Single-Leaf Pinyon	*Pinus monophylla*
Basin Sagebrush	*Artemisia tridentata*
Penstemon	*Penstemon* spp.

Great Basin Plateau to the base of the Sierra Nevada from Modoc County to Southern Mono County, 4,200 to 5,600 feet in the north, 6,000 to 7,000 feet in the south.

Average precipitation 10 to 30 inches, largely as snow; growing season 2 to 5 months, with 70 to 140 frost-free days; mean summer maximum temperatures 82-89°, mean winter minima 10-20°F.

Open forest of trees 10 to 60 feet tall, on brush-covered slopes and flats.

28. PINYON-JUNIPER WOODLAND

Single-Leaf Pinyon	*Pinus monophylla*
California Juniper	*Juniperus californica*
Utah Juniper	*Juniperus osteosperma*
Scrub Oak	*Quercus dumosa*
Antelope Brush	*Purshia* spp.
Mountain Mahogany	*Cercocarpus ledifolius*
Mojave Yucca	*Yucca schidigera*

East base of Sierra Nevada, White-Inyo ranges southward through higher mountains of Mohave Desert, mostly at elevations of 5,000 to 8,000 feet, and between Yellow Pine Forest and Joshua Tree Woodland or Sagebrush Scrub.

Average precipitation 12 to 20 inches, with some snow and some summer showers; growing season 5 to 8 months, 150 to 250 frost-free days; mean summer maximum temperatures about 88-95°, mean winter minima about 20-30°F.

Trees 10 to 30 feet tall, in open stands with shrubs between.

29. JOSHUA TREE WOODLAND

Joshua Tree	*Yucca brevifolia*
Mojave Yucca	*Yucca schidigera*
California Juniper	*Juniperus californica*
Utah Juniper	*Juniperus osteosperma*
Bladder Sage	*Salazaria mexicana*
Box Thorn	*Lycium* spp.
Wild Buckwheat	*Eriogonum fasciculatum*
Cotton Thorn	*Tetradymia* spp.
Saltbush	*Atriplex* spp.
Cholla, Prickly Pear	*Opuntia* spp.

Well-drained mesas and slopes, 2,500 to 4,000 feet or higher, from southern Owens Valley to Little San Bernardino Mountains and southern Nevada and Utah.

Average rainfall about 6 to 15 inches, with summer showers; growing season on the deserts limited by water rather than by temperature; frost-free days 200 to 250; mean summer maximum temperatures 95-100°, mean winter minima 22-32°F.

Trees 10 to 30 feet high, scattered, with scrubs and herbs between.

SELECTED REFERENCES

Munz, Philip A. and David D. Keck. 1949. California plant communities. El Aliso 2 (1):87-105.

_____ and _____. 1950. California plant communities–supplement. El Aliso 2 (3):199-202.

_____ and _____. 1959. A California flora. Univ. of California Press, Berkeley and Los Angeles. 1681 p. (4th print. 1968).

Ornduff, Robert. 1974. An introduction to California Plant Communities. Univ. of California Press, Berkeley. 152 p.

Thorne, Robert F. 1974. The vascular plant communities of California. Unpublished talk presented at the Native Plant Society Annual Mtg., Spring 1974. Native Plant Society special publication (in press).

APPENDIX B

RESIDENT OUTDOOR/ENVIRONMENTAL EDUCATION PROGRAM OPINION QUESTIONNAIRE

Instructions to Respondents:

On the following questionnaire you are asked to give your perceptions of the outdoor education program. The items you are asked to rate are grouped into four major areas, namely:

- Instructional Programs: Philosophy, Needs, Goals and Objectives
- Instructional Programs: Content and Instructional Strategies
- Instructional Support Processes: Roles and Relationships
- Instructional Support Resources: Site, Staff, Equipment and Materials, Support Services

We would appreciate your rating the items under each of these headings on an agree/disagree scale. Neutral, Don't Know, and Not Applicable columns are provided when one of the four major responses cannot be used or is not appropriate.

Agree ratings should be given on items with which you agree as stated. *Disagree* ratings are used on those items with which you cannot agree. *Agree Somewhat* and *Disagree Somewhat* are used when you slightly agree or disagree.

To summarize, ratings are relative to what you feel about your outdoor education program. It is important to remember that:

- These are *your* perceptions. Thus, this questionnaire should not be discussed with anyone else prior to completing it.
- Your first impression is usually the best.
- At the end of the instrument, you will have an opportunity to discuss factors you consider particularly important.

Your cooperation and interest will help to improve your outdoor education program.

Give a brief description of your position:

		(1) Agree	(2) Agree Somewhat	(3) Disagree Somewhat	(4) Disagree	(A) Neutral	(B) Don't Know	(C) Not Applicable
Instructional Programs: Philosophy, Needs, Goals and Objectives								
1. The educational philosophy of the school district was influential in developing the philosophy of the outdoor education program.	(1)							
2. There is a written philosophy for the outdoor education program which is consistent with the philosophy of the education for the district.	(2)							
3. The primary emphasis of the outdoor education program is on developing understanding and appreciation of man's relationship to his environment.	(3)							
4. The instructional program has been designed to meet the identified needs of the students it serves.	(4)							
5. The goals of the outdoor education program are based upon the identified needs of the students served.	(5)							
6. The goals of the outdoor education program complement the district's goals of education.	(6)							
7. Stated student objectives are developed for the accomplishment of the outdoor education program.	(7)							
8. Stated student objectives are developed for each program area in the outdoor education program.	(8)							
9. Based upon the information available, the outdoor education program is accomplishing its stated purposes and objectives.	(9)							

	(1) Agree	(2) Agree Somewhat	(3) Disagree Somewhat	(4) Disagree	(A) Neutral	(B) Don't Know	(C) Not Applicable
Instructional Programs: Content and Instructional Strategies							
10. Student orientation is adequate in the areas of: programs, scheduling, facilities, standards of behavior and safety. (10)							
11. Outdoor education program emphasis is on activities which cannot be accomplished in the regular classroom. (11)							
12. Students and teachers have adequate opportunity to develop some of their own objectives for their outdoor education experience. (12)							
13. The regular classroom teacher has responsibility for learning as a participant in the outdoor education program. (13)							
14. The outdoor education program has a written weekly program of objectives. (14)							
15. One of the primary emphases of the outdoor education program is man's relationship to his environment. (15)							
16. The outdoor education program emphasizes first-hand experience with the environment through the five senses. (16)							
17. One emphasis of the outdoor education program is development of citizenship behaviors such as rights, responsibilities, respect for others, chores, privacy, etc. (17)							
18. The outdoor education program offers a wide variety of program activities consistent with its program objectives and environmental phenomena area. (18)							
19. One emphasis of the outdoor education program is solving the problems of living away from home. (19)							

	(1) Agree	(2) Agree Somewhat	(3) Disagree Somewhat	(4) Disagree	(A) Neutral	(B) Don't Know	(C) Not Applicable
20. The outdoor education program advantageously uses food service and dining hall activities as learning opportunities (i.e., table setting, table service, manners, etc.). (20)							
21. The learning strategies used in the outdoor education program are matched to the program goals and objectives. (21)							
22. Suggested follow-up activities and materials are available for the students and teachers to use after the experience. (22)							
Instructional Support Processes: Roles and Relationships							
23. Pupils are informed as they should be about the outdoor education program. (23)							
24. The outdoor education program is an important part of the regular school program as presently designed and implemented. (24)							
25. Before attending the outdoor education program, the students are adequately prepared for the learning experience. (25)							
26. Teachers at the local school sites have adequate information and time to prepare students to attend the outdoor education program. (26)							
27. There is adequate follow-up in the regular school classroom following students participation in the outdoor education program. (27)							
Instructional Support Resources: Site, Staff, Equipment, Materials, Support Services							
28. The site is adequate to accomplish the goals of the outdoor education program. (28)							
29. The environmental phenomena area in the outdoor education program offers a wide variety of learning opportunities. (29)							

		(1) Agree	(2) Agree Somewhat	(3) Disagree Somewhat	(4) Disagree	(A) Neutral	(B) Don't Know	(C) Not Applicable
30. Staff assignments are appropriate for the program and capabilities of the individuals.	(30)							
31. Instructional and recreational facilities are adequate for both staff and students.	(31)							
32. Funding of the outdoor education program does not cause undue hardship to either the students or school district.	(32)							
33. Equipment and materials are adequate to meet the requirements of the curriculum.	(33)							
34. The size and quality of the support staff (cooks, maintenance personnel, clerical help, etc.) are adequate to maintain the outdoor education program.	(34)							
35. The outdoor education program has resource materials developed specifically for its program and operation.	(35)							

In the space below, please elaborate on any ratings you gave to particular questionnaire items you may want to explain. This space is to be used only if you want to further explain one or more of your ratings.

Please answer the following:

A. What are the three greatest strengths of your outdoor education program?

1.

2.

3.

B. What are the three greatest weaknesses of your outdoor education program?

1.

2.

3.

C. Can you suggest methods of how the program can be improved?

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

APPENDIX C

DEFINITION OF TERMS

Biotic province	Characterized by the occurrence of one or more important ecological associations that differ from the associations of adjacent provinces; covers a large, continuous geographic area.
Certification	Official verification by authorized persons that a site and program qualifies as a Resident Outdoor Environmental Education Program.
Certificated staff	Administrators and teachers who hold valid California credentials.
Educational goal	A statement of broad direction or intent which is general and timeless and is not concerned with a particular achievement within a specified time period.
Educational objective	A devised accomplishment that can be verified within a given time and under specifiable conditions which, if attained, advances the system toward a corresponding goal.
Educational philosophy	A composite statement of the relationship between the individual and society based upon beliefs, concepts, and attitudes from which the goals and objectives of the program are derived.
Environmental education	Instruction in the protection and conservation of resources including the necessity for the protection of our environment, in man's relations to his human and natural environments, and man's place in ecological systems.
Infirmary (First Aid Center)	Any room or area set aside in a ROEEP for the health needs of students usually involving an isolation area.
Local Education Agency (LEA)	A school district or a county superintendent of schools operating or authorized to operate a children's center.
Non-certificated staff	Personnel of a school district employed in positions not requiring certificates.
Outdoor education	Programs and classes in outdoor science and conservation education, within or without the boundaries of the school district.
Organization chart	A diagram providing visual illustration of levels of management in the organization, as well as the lines of accountability, showing that each person is accountable to an immediate superior and will receive assignments from one superior only. It is a means of insuring that top management maintains effective control and coordination.

Plant community	An ecological unit or regional element of the vegetation that is characterized by the presence of certain dominant species.
Pupil	A child in elementary school who is in the charge of an instructor.
Pupil needs	The discrepancy between current conditions or outcomes and required conditions or outcomes.
Resident Outdoor Environmental Education Program (ROEEP)	A transfer of a class or group of pupils from their school to an off-site location where courses, subjects, classes, and organized group activities provide instruction in environmental education during a period of at least three days and three nights (consecutive school days).
ROEEP	Resident Outdoor Environmental Education Program.
ROEEP administrator	Coordinator, principal, director, etc. of a Resident Outdoor Environmental Education Program.
Vegetation type	Major structural units of the vegetation of an area; often referred to as plant formations or climax formations; the product of climatic factors effective in a region; may consist of one to several communities.

APPENDIX D

CRITERIA FOR RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAMS

Specifically identifiable activities and instructional objectives separate resident outdoor education from other school programs. To qualify as a Resident Outdoor Environmental Education Program (ROEEP), the following criteria should be met:

1. The curriculum focuses on man's role in the environment, including social relationships.
2. Instruction is designed to develop appreciation of the complex relationships of physical and biological aspects of the environment.
3. Emphasis is given to instruction regarding wise use of natural resources (conservation).
4. Curriculum activities develop aesthetic appreciation of environmental quality.
5. Activities are directed toward encouraging and strengthening the development of skills for studying the environment and for solving environmental problems.
6. No child is subsidized by State funds for more than five days of ROEEP in his/her entire school career.
7. Only grades four through eight are eligible.
8. The ROEEP will consist of three consecutive regular school days and nights.
9. The ROEEP provides a curriculum which will help students understand the interrelationships of the physical environment and man's role in the ecosystem toward the development of skills, attitudes, knowledge, and commitment concerning the wise use of natural resources and the protection and enhancement of the environment.
10. A ROEEP site provides a variety of environmental phenomena which may be observed and studied firsthand.
11. A ROEEP provides materials, equipment, personnel, and facilities to enable students to observe and study environmental phenomena and interrelationships to the best possible advantage.
12. A ROEEP provides appropriate facilities and staff for the feeding and lodging of students and teachers while in attendance at the center.

APPENDIX E

RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAM

Skeleton Budget Outline

1000 CERTIFICATED SALARIES
- 1110 Teacher
- 1210 Principal
- 1313 Program Specialist
- 1315 Director
- 1613 Nurse

2000 CLASSIFIED SALARIES
- 2111 Instructional Aide
- 2114 Other Aides (cabin supervisor, teacher assistant, etc.)
- 2210 Classified Administrators (site manager)
- 2310 Clerical and Other Office Salaries
- 2410 Maintenance Personnel
- 2510 Food Service Personnel
- 2920 Student Worker

3000 EMPLOYEE BENEFITS
- 3100 State Teacher Retirement System
- 3200 Public Employees Retirement System
- 3300 Social Security
- 3410 Health and Welfare
- 3510 Unemployment Insurance
- 3600 Workman's Compensation Insurance

4000 BOOKS, SUPPLIES, EQUIPMENT REPLACEMENT
- 4200 Books
- 4310 Instructional Supplies (craft, art, garden, writing)
- 4410 Instructional Media Materials (slides, film strips, recorders, cameras, projectors)
- 4420 Instructional Media Supplies (film, recording tape, cartridges, records)
- 4510 Duplicating (most printed materials, i.e., forms, instructions,directions)
- 4530 Postage
- 4540 Office Supplies (typing materials, duplicating materials, forms, stationery supplies)
- 4550 Maintenance Supplies (cleaning, rest room supplies, light bulbs and other)
- 4710 Food (for programs operating their own food service program)
- 4810 Equipment Replacement (replacement of appliances, cameras, projectors)

5000 CONTRACT SERVICES AND OTHER OPERATING EXPENSE
- 5110 Contract Consultants
- 5210 Mileage
- 5220 Conference
- 5310 Dues and Memberships
- 5400 Insurance
- 5410 Pupil Insurance (camper insurance)
- 5510 Utilities
- 5520 Telephone
- 5540 Laundry and Towel Services
- 5611 Rents and Leases (buildings and grounds)
- 5621 Buildings and Grounds Maintenance Contracts
- 5622 Equipment Rental
- 5630 Contract Transportation
- 5695 Contract Food Service

6000 SITES, BUILDINGS, BOOKS, AND NEW EQUIPMENT
- 6110 Site Acquisition
- 6120 Improvement of Grounds
- 6210 New Buildings
- 6310 Library Contents (books, films)
- 6411 Audiovisual Equipment
- 6490 All Other Equipment

APPENDIX F

SAMPLE SCHEDULES AND FORMS OF OUTDOOR SCHOOL PROCEDURES

SAMPLE

SCHEDULE OF WEEK'S ACTIVITIES AT THE SCHOOL CAMPS

TIME ACTIVITY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
6:30 Reveille & Flag					Pack Up
7:15 Breakfast	Set Up Camp				
7:45 Breakfast Dishes					
8:15 Cabin Clean-up					
9:00 Morning Assembly	Staff Meeting Arrival of Campers	Singing Weather Reports Nature Lore Divide Groups	Singing Weather Reports Nature Lore Divide Groups	Singing Weather Reports Nature Lore Divide Groups	Evaluations with Campers
9:30 Morning and All-Day Activities	Divide Campers into Living Groups	Craft Hikes Conservation Science	Craft Hikes Conservation Science	Craft Hikes Conservation Science	Square Dance Hikes Craft Finish-up Various Sciences
11:30 End of Activities	Orientation of Campers				Evaluation Meeting with Classroom Teachers
11:45 Lunch Prep					Lunch
12:00 Lunch & Dishes					Departure
12:30 Rest & Cabin Time	Health Check				
1:30 Afternoon Assembly	Orientation of Classroom Teachers by Principal	Singing Sharing Nature Lore Breakup	Singing Sharing Nature Lore Breakup	Singing Sharing Nature Lore Breakup	
2:00 Afternoon Activities	Camp Tour Hikes Sign-up for Activities	Craft Sciences Conservation Observatory & Cookout All-Day Hike – Lunch Out	Craft Sciences	Craft Sciences	
4:00 End of Activities					
4:00 Leisure & Games			Staff Meeting		
4:30 Showers					
5:15 Supper					
6:00 Supper Dishes					
6:15 Free Time or Special Interest		Astronomy Night Hike	Astronomy Night Hike	Astronomy Night Hike	
6:50 Evening Program Prep.	Camp Olympics	Indian Ceremony	Choice Night	Talent Night	
7:00 Evening Program	Pioneer Games		Story of the Forest	Last Camp Fire	
8:00 Wash and Prepare for Bed					
8:30 Story					
9:15 Lights Out / Quiet					

SAMPLE

CLEAR CREEK OUTDOOR EDUCATION CENTER
WINTER PROGRAM WEEKLY SCHEDULE
1975–1976

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7:00	Staff Arrives	Rise & Clean Cabin	Rise & Clean Cabin	Rise & Clean Cabin	Load Luggage & Clean Cabin
8:00		Breakfast	Breakfast	Breakfast	Breakfast
8:30		Conservation Hour	Conservation Hour	Conservation Hour	Conservation Hour
9:00					
9:15		Flag	Flag	Flag	Flag
10:30	Arrival at Pines Area	Study of Non-Living Things (Weather & Geology)	Study of Living Things (Animals)	Study of Living Things (Plants)	Summary & Evaluation
11:30					Campers Leave
12:30	Cookout	Lunch	Lunch	Lunch	Sack Lunch at School
1:00	Orientation	Happy Hour	Happy Hour	Happy Hour	
1:30	Hike to Camp				
2:30	Cabin Orientation	Naturalists & Classroom Teacher	Teacher with Whole Class	Naturalists & Classroom Teacher	
3:30	Camp Store	Showers	Showers	Showers	
4:30	Recreation Flag & Happy Hour	Cabin Activities Recreation Flag	Cabin Activities Recration Flag	Cabin Activities Recreation Flag	
5:30	Dinner	Dinner	Dinner	Dinner	
6:00	Quiet Activities	Quiet Activities	Quiet Activities	Quiet Activities	
7:00	Teacher With Students	Astronomy Night Hike or Cabin Program	Astronomy Night Hike or Cabin Program	Campfire	
7:30	Campfire				
8:30	Prepare for Bed	Prepare for Bed	Prepare for Bed	Prepare for Bed	
9:00	Lights Out	Lights Out (9:30)	Lights Out (9:30)	Lights Out	

SAMPLE
LETTER TO INFORM PARENTS ABOUT OUTDOOR SCHOOL

To Parents of Pupils Attending Outdoor School:

Your school district is offering your child a five-day experience at the Outdoor School. This excellent environmental education program is coordinated by _____ and is conducted as a California public school.

The week of attendance at Outdoor School is part of your child's class work and he or she should attend if possible. The class and the classroom teacher will leave school by school bus about 9 a.m. on _____, and will return to the school by 3 p.m. on _____

Outdoor school attendance will be a new educational experience for your child. The natural environment of the outdoor school location is a different kind of classroom. Students learn through direct experience and observation. Conservation, ecology, environmental relationships, human relationships, natural resources are some of the areas of learning included in the outdoor school curriculum.

In addition to the outdoor school academic learning, the 24-hour residence — with the student responsible for making his bed, caring for his own clothing, keeping neat and clean, setting tables, washing dishes and many other chores required in daily living — has proven to be a valuable educational experience for pupils attending.

The permanent outdoor school staff (the outdoor school administrator, teachers, and instructional aides) have been especially trained to provide a successful learning experience for your child. Every possible effort will be made to provide nutritious, well-prepared food; safe, enjoyable activities; and plenty of rest.

Students will have qualified adult supervision at all times during their residence at outdoor school. Sleeping units are equipped with vented heaters, comfortable beds and toilet facilities. Sickness and accident insurance covers your child from the time he or she leaves home until he or she returns. Additional information may be obtained from your school principal.

Your child will look forward to a letter from you while at outdoor school, and will be expected to write you shortly after arriving. Mail should be addressed to:

To Outdoor School Participants:

The following list of clothing and equipment will mean comfort to you while you attend outdoor school. It is wise to bring only those things you will need. Older but serviceable clothing is best. New items are usually uncomfortable and may need "breaking in". Since space at the outdoor school is limited, please plan your luggage to include only a bedroll and one duffel bag or suitcase. Bring these to school at 8 a.m. on the day you are to leave for outdoor school.

To prevent loss you should mark your luggage and clothing with your name.

NEEDED ITEMS	OPTIONAL
Two-blanket bedroll and sheets or sleeping bag	Pillow and pillowcase
A coat or jacket	Compass
1 pair strong shoes (good soles and heels)	Camera and lots of film
1 pair tennis shoes	
5 pairs socks (heavy if possible)	Bathrobe
1 pair pajamas	
3 pairs pants, jeans, cords, or heavy trousers	Shower cap for girls
1 warm sweater	Cutter's Insect Repellant (fall and spring)
3 shirts	
4 changes of underwear	
Rainy weather clothing (October-May)	
Mittens or gloves and extra sox (October-May)	NO MONEY, NO CANDY, NO GUM
6 handkerchiefs or "kleenex"	
Hat, scarf, or cap	
Toilet kit containing:	
comb	
soap (in box)	
1 bath towel	
1 wash cloth	
toothbrush and toothpaste	
lip salve	

Letterwriting materials —
stationery and stamps or postcards

Mail address:

SAMPLE

OUTDOOR SCHOOL REGISTRATION FORM

We would like to register our child, _____, to attend a five-day resident outdoor school from _____ to _____ at a total cost of $_____

We understand that this cost includes payment of premiums for sickness and accident insurance covering our child while attending outdoor school and enroute to and from the outdoor school camp. Shoud it be necessary for our child to have medical care, we hereby give permission to the outdoor school administrator to use his/her judgment to obtain the best such service for our child. We understand that any cost beyond the coverage provided in the site owner's policy will be our responsibility.

Signed this _____ day of _____, 19__

_____

Signature of parent or guardian

_____

Address (street, city, state, zip code)

Home telephone_____ Emergency telelphone_____

_____

_____

NOTE: The outdoor school is located approximately _____ minutes from medical offices and hospital services. Parents will be notified immediately when a child becomes seriously ill or injured and aid will be given according to the parent's wishes. Arrangements will be made with parents to pick up their child if desired.

If it is desired that no medical treatment be given to your child, please provide necessary instructions on this registration form and submit signed form.

COMPLETE HEALTH INFORMATION ON REVERSE SIDE

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SAMPLE

PUPIL HEALTH INFORMATION

1. Has (your child) been ill recently? If so, describe _____

2. Is your child subject to any of the following? Explain checks.

- ☐ allergies
- ☐ allergy to bee stings
- ☐ backaches or weak back
- ☐ epilepsy or convulsive disorder
- ☐ frequent colds
- ☐ heart trouble or murmur
- ☐ sinus trouble
- ☐ asthma
- ☐ hay fever
- ☐ headaches
- ☐ poison oak
- ☐ car sickness
- ☐ bedwetting (send extra bedding if checked)
- ☐ bowel problems
- ☐ sleepwalking homesickness
- ☐ vomiting when excited

3. Date of last known Tetanus Toxoid shot (or approximate date) _____

4. Is your child on a special diet? If yes, explain _____

5. Has your child been exposed to a communicable disease during the past month? If so, which one _____

6. Does your child take prescribed medication regularly? In order for your child to receive medication at outdoor school it is necessary that a medication request form be completed by your physician and signed by you. A separate form must be completed for each medication prescribed for the period your child will attend outdoor school. The prescription container must be clearly labeled with the following information:

    1. pupil's full name
    2. physician's name
    3. physician's telephone number
    4. name of medication
    5. dosage, schedule and dose form
    6. date of expiration of prescription
    7. each medication must be in a separate container

7. If your child is under a doctor's care for an acute or chronic problem, your physician should understand that the child will be away from home for four or five full days so that he can give special instructions on the form.

8. Please indicate your authorization to give your child common remedies such as aspirin, cough medicine, antiseptic, lotions by signing below:

_____

Signature of parent or guardian

SAMPLE

REGULATION ON THE ADMINISTRATION OF MEDICATION DURING SCHOOL HOURS

No pupil shall be given medications during school hours except upon the written request from the parent or guardian of the pupil and a licensed physician who has the responsibility for the medical management of the pupil.

School personnel, if authorized by the responsible administrator, may assist pupils who must take prescribed medication during school hours through use of the following procedure.

1. A request form for each prescribed medication must be completed by the pupil's physician, signed by the parent or guardian, and filed with the school administrator. (Form #SE-H1)

2. The container must be clearly labeled with the following information:

    a. Pupil's full name

    b. Physician's name

    c. Physician's telephone number

    d. Name of medication

    e. Dosage, schedule, and dose form

    f. Date of expiration of prescription

    Each medication is to be in a separate container labeled as above. The school administrator will assume responsibility for placing medications in a locked cabinet which shall be used only for the storage of medication.

3. Pupils will be assisted with taking medications according to the physician's instructions under the direction of the school administrator and the procedure observed by a certificated school staff member.

4. The parent or guardian will assume full responsibility for the supplying of all medications.

No medications may be brought to school by pupils or on the school bus. Parents shall deliver or cause to be delivered by an adult or an authorized employee of a pharmaceutical supplier, any medication to be administered under the provisions of this policy. Parents shall be encouraged to cooperate with the physician to develop a schedule so that the necessity for taking medications at school will be minimized or eliminated.

REQUEST FOR MEDICATION TO BE TAKEN DURING SCHOOL HOURS
(To be completed by a licensed physician)

Last Name of Pupil _____ First Name _____ Sex _____ Date of Birth _____ School _____

Purpose of Medication _____ Name of Medication _____

Dosage Prescribed _____ Time Schedule _____ Dose Form (Tablet, Liquid, etc.) _____

Date of Prescription _____ Length of Time This Medication Will Be Necessary _____

Precautions, Special Instructions, Possible Adverse Effects, Comments:

_____

_____

_____

_____

The pupil for whom this medication is prescribed is under my care.

Print Name of Physician _____ Signature of Physician _____

Address _____ Telephone _____ Date _____

I request that my child, _____, be assisted in taking the above prescribed medication at school by authorized persons, and will comply with the school's policies and procedures.

Date _____ Telephone _____ Signature, Parent or Guardian _____

SAMPLE

THE ROLE OF THE CLASSROOM TEACHER IN THE OUTDOOR SCHOOL

Classroom teachers have a very important role in the effective outdoor school program. Primary responsibility for preparing students for their outdoor school experience lies with classroom teachers. They help the class prepare academically, physically, and emotionally for the outdoor school attendance, and they share the students' activities while they are at camp. Some specific responsibilities of the classroom teachers are to:

Develop classroom activities to prepare students for their outdoor school experience

Send home with each pupil registration forms requiring parent's signature, a letter explaining the outdoor school program, and a list of things they will need to take to Outdoor School.

Send to the Outdoor School, approximately ten days before attendance, a copy of the tentative cabin assignment form. Classroom teachers should take with them to the outdoor school a copy of the final grouping form showing any changes.

Serve as the deputized district authority at Outdoor School. Classroom teachers shall ride on the bus with the pupils and return to the district with the class. Classroom teachers may be requested to provide guidance and counsel for pupils in their classes who have behavioral or personality problems.

Attend scheduled orientation meetings at Outdoor School.

Supervise pupils at a table during mealtimes.

Assist in the supervision and instruction of pupils during field study.

Provide guidance needed in outdoor school activities and projects.

Meet at least once with the pupils while the class is at Outdoor School.

Complete a form evaluating the outdoor school program.

Develop strategies for reinforcing and extending the outdoor school experience through continuing studies in the classroom.

SAMPLE

CLASS PREPARATION FORM

Name of Teacher_____ School_____

Dates of Attendance_____ District_____

The total outdoor school program includes pre-outdoor school study in the classroom. Activities listed below are designed to aid you in preparing your students for their week at outdoor school. Completing these minimum preparations will make your students' experience more meaningful. It will also enable the outdoor school staff to tailor the learning program to meet special needs of your class.

Please check each of the items you have completed and mail this form with the Cabin Assignment Form to the Outdoor School at least one week prior to the class' attendance.

- ☐ 1. Know the following glossary terms: adaptation, deciduous, duff, ecology, environment, evergreen, fungi, humus, inorganic-organic, interdependence, litter, mineral, parasite, pollute-pollution, photosynthesis, riparian, symbiosis, larva, conservation.
- ☐ 2. Know the five senses, their meanings, and what you can discover with them.
- ☐ 3. Know the basic water cycle including the terms: evaporation, condensation, precipitation.
- ☐ 4. Know what an ecosystem is and the four components of an ecosystem: producer, consumer, decomposer, and physical environment consisting of air, water, sun, and soil.
- ☐ 5. Discuss the basic responsibilities of the students in a mini-community: cabin living, cabin housekeeping, dishwashing, table setting.
- ☐ 6. Discuss the basic physical needs of the children attending outdoor school

List in the space below any special activities you have planned or that you wish your class to undertake while at Outdoor School:

_____

_____

_____

_____

List the names of any children who need special consideration (emotional, physical, medical, etc.). Use the back of this sheet if necessary.

SAMPLE

TIME AND SEQUENCE CHECK LIST

(Forms are to be distributed by the district coordinator)

TIME	ITEM	DONE
One month prior to going to Outdoor School	Send following printed material home: Explanatory Letter to Parents List of Suggested Clothing and Equipment	
Three weeks prior to going to Outdoor School	Outdoor education orientation meeting for parents. Send appropriate notices home.	
Two weeks prior to going to Outdoor School	Distribute the Outdoor School Registration Form to parents. Collect in three days. Check each form for authorization signature for emergency medical care.	
Ten days before going to the Outdoor School	Mail the Tentative Cabin Assignment Form and the Class Information Sheet to the Outdoor School Administrator in care of the outdoor school address.	
On arrival at Outdoor School	Give Registration Form and revised Cabin Assignment form to the Teacher-Coordinator. Special medication instructions should be handed in also.	
On Monday following the return form Outdoor School	Send home the Parent Evaluation Form	

SAMPLE

OUTDOOR SCHOOL CABIN ASSIGNMENT FORM

Ms.
Mr._____ Name of School _____
Name of Classroom Teacher

Ms.
Mr._____ Name of Attendance
Week of Attendance _____
Name of Instructional Aide
Accompanying Class to Outdoor School

Total number of pupils that will attend outdoor school Boys Girls

To achieve harmonious combination of pupils from different classrooms in each cabin at Outdoor School, distribute the boys equally (or nearly equally) among all the boys' cabins and divide the girls equally among all the girls' cabins; i.e. starting with boy 1, in numerical order fill all the boy spaces needed and do the same for the girls.

BOY'S CABIN 1

1. _____
4. _____
7. _____
10. _____
13. _____
16. _____

BOYS' CABIN 2

2. _____
5. _____
8. _____
11. _____
14. _____
17. _____

BOYS' CABIN 3

3. _____
6. _____
9. _____
12. _____
15. _____
18. _____

GIRLS' CABIN 1

1. _____
4. _____
7. _____
10. _____
13. _____
16. _____

GIRLS' CABIN 2

2. _____
5. _____
8. _____
11. _____
14. _____
17. _____

GIRLS' CABIN 3

3. _____
6. _____
9. _____
12. _____
15. _____
18. _____

SAMPLE

PRINCIPAL
OUTDOOR EDUCATION

A. Job Summary: To conduct the 24-hour per day on-site Outdoor Education Program.

Immediate Supervisor: Outdoor Education Supervising Principal.

B. Duties and Responsibilities:

1. Assumes responsibility for training, supervising and evaluating assigned staff in the Outdoor Education Program under the direction of the supervising principal.
2. Interprets and implements the approved curriculum program.
3. Establishes an effective camp administrative organization with clear lines of responsibility and the necessary delegation of authority, especially in the areas of health, kitchen, and maintenance functions.
4. Administers the instructional program at the camp by scheduling and assigning camp teachers, instructional aides, and classroom teachers for student activities, and by scheduling classroom visits, conferences, and meetings.
5. Maintains activities necessary to support the instructional program such as keeping records of program and student activities, assuring buildings and grounds are maintained through acceptable housekeeping standards in a clean and safe condition, requisitioning equipment and supplies, and arranging for student and staff living quarters.
6. Carries on a human relations program in order to maintain high morale of the camp staff.
7. Develops camp plans and organizational procedures for the health, safety, discipline, and conduct of pupils including procedures for handling student discipline cases referred by teachers and the possible exclusion of individual students from camp.
8. Provides for the interpretation of the Outdoor Education Program to visitors.
9. Assists Outdoor Education Program administration in weekend and summer utilization of camp facilities
10. Performs other duties as assigned.

SAMPLE

ELEMENTARY CLASSROOM TEACHER

Outdoor Education

A. Brief Description of Position: Teaches and supervises sixth-grade pupils in an outdoor science, conservation, and camping program.

B. Major Duties and Responsibilities:

1. Teaches in an outdoor setting natural sciences and related subjects such as astronomy, biology, ecology, forestry, geology, and meteorology.
2. Teaches and supervises pupils working in conservation projects such as fire hazard reduction, soil erosion control, tree planting, and beetle control.
3. Instructs pupils on nature hikes.
4. Transports pupils in camp buses and drives camp buses.
5. Teaches arts and crafts, such as rock carving, woodworking, clay modeling, and animal tracking. Teaches music and folk dancing.
6. Promotes responsible pupil citizenship practices through democratic processes.
7. Supervises pupils in camp living activities such as showers, clean-up, dish washing, meals, and during rest periods. Has all-night supervision one or two nights per week.
8. Provides instruction in health and safety aspects of camping related to such things as fire, snow, snakes, poison oak, and rabies.
9. Plans, organizes, and conducts assemblies and programs.
10. Teaches and supervises pupils in snow activities and snow sports.
11. Performs other duties as assigned.

C. Other Duties and Responsibilities:

1. Works on special camp improvement projects.
2. Evaluates the outdoor education program and recommends changes or improvements.
3. Counsels individual pupils as required.
4. Provides orientation and in-service education to new outdoor education teachers and teacher aides.
5. Assists in maintaining staff lounge and staff living quarters.

D. Supervision Exercised or Received: Under the immediate direction of the Camp Principal with staff assistance from the Supervising Principal. Provides general supervision to teacher assistants as assigned.

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SAMPLE

POSITION QUALIFICATIONS

Elementary Classroom Teachers, Outdoor Education

A. Minimum Qualifications:

1. Credential: Any regular elementary teaching credential and valid California School Bus Driver's License.
2. Education: Bachelor's degree, including all courses needed to meet credential requirements. Must have had training in First Aid.
3. Experience: Practice teaching or full-time teaching experience sufficient to meet credential requirements.
4. Personal Qualities: Appearance, grooming and personality which establish a desirable example for pupils. Ability to meet district standards for physical and mental health. Better than average recommendations from student teaching supervisors or other professionals who have observed the personal characteristics, scholastic attainment and classroom performance of the teacher.

B. Unusual Working Conditions:

1. Isolation from town and family three to four days a week.
2. Long working days (7 a.m. to 9 p.m.) with relatively few break periods and little time for for personal business.
3. Must maintain a separate domicile, usually commuting–great distances.
4. Out-of-doors work requiring all-weather exposure and exposure to health and safety hazards.
5. Must eat all meals with pupils.
6. Substitute teacher service not always available, requiring overloads occasionally.
7. Camp living conditions.
8. Little opportunity for professional improvement (and salary advancement) through enrollment in college courses during the school year, or, if undertaken, considerable travel distance is required.
9. Very close teamwork required of all members on the camp staff.
10. Is "on call" at all times he is in the camp.
11. Often must assume parent role for pupils in the camp.

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SAMPLE

CAMP AIDE

Outdoor Education

A. Job Summary: Under the immediate direction of a camp principal, head teacher, or teacher to provide assistance to the instructional and recreational program in a sixth grade Outdoor Education camp.

Immediate Supervisor: Head Teacher, Outdoor Education.

B. Duties and Responsibilities:

1. Assists teachers in the instruction of campers in the areas of nature study, conservation, work experience, handicrafts, health and safety.
2. May lead small group activities and tutor individual students.
3. Supervises campers during outdoor activities such as field trips and recreation and during programs and assemblies.
4. Supervises campers in camp living activities such as showers, clean-up, meals, and during rest periods.
5. Promotes responsible pupil citizenship practices through democratic processes.
6. Performs other duties as assigned.

SAMPLE

THE OUTDOOR EDUCATION CURRICULUM: A PLANNED PROGRAM OF ACTIVITIES

It is not enough to take a child from one environment and put him in another. Plans must be made for maximum use of the assets of the new environment to promote desirable growth in attitudes, learnings and practices in mental and physical health, self-realization, and in human relationships. These plans constitute the curriculum of the outdoor education program.

The curriculum:

- Involves much action–working, playing, exploring, discovering, creating, conserving, sharing, investigating and evaluating.
- Is centered around the children's needs and interests.
- Includes experiences of many types; new and different experiences that broaden the horizon and stimulate new interests.
- Is close to the immediate environment–it is here and now.
- Includes experiences that are well integrated, cutting across many subject areas.

Woven into the fabric of living at camp must be threads that appear now in this pattern and again in another in varying relationships with many other threads. Some of these threads that must be woven into the curriculum are: learning, orientation, health, spiritual needs, recreation, self-expression, purposeful work, self-reliance and democratic action.

NEW EXPERIENCES IN A NEW ENVIRONMENT

In this curriculum boys and girls study new and different books. These living books are: the hills, the valleys, the rivers, the heavens, the plants and animals, and the camper group.

The materials used are the materials of the environment:

- Clay dug from the old Indian claybank.
- Alabaster brought to camp from the near-by desert foothills.
- Rocks and minerals.
- Manzanita and wild lilac wrested from the chaparral-covered hills.
- Pine cones, bark, lichen, seed pods, incense cedar and pine, all brought from a morning's excursion to be used in creative work and expression later in the day.

The tools are the basic hand tools of the woodsman and craftsman: knives, axes, shovels, saws, files, chisels, hammers, drills, glue and sandpaper.

The equipment is that of the discoverer: maps, compasses, telescopes, binoculars, microscopes and magnets.

The methods are those of the scientist: exploring, discovering, collecting, recognizing problems, planning, cooperating, proposing, testing, investigating and evaluating.

In this classroom that has no walls, using the above materials, tools and methods, a vital program of living, learning and working together shapes a purposeful experience curriculum.

THE INSTRUCTION PROGRAM

The following outline presents a brief overview of experiences included in the outdoor instruction program.

I. Experiences in Natural Sciences

A. The heavens

1. Studying the stars and going on night hikes.
   a. Finding constellations using portable planetariums.
   b. Learning legends about the constellations.
   c. Observing the planets, moon, and stars through telescopes.
   d. Studying sun spots projected by telescopes.
2. Studying telescopes and their uses.
3. Visiting an observatory and museum.
4. Learning to use stars to determine direction.
5. Viewing films about astronomy.

B. Weather and Climate

1. Discussing the importance of weather to the camp environment, plants, animals and campers.
2. Using the camp weather station to observe, measure, record, report and predict.
3. Discussing clouds, rain cycle, wind.
4. Developing a "fire hazard index" to determine if camp activities such as cookouts, campfires and burning can be carried on safely.

C. Rocks and Minerals

1. Studying the geological history of the outdoor area.
   a. Examining roadcuts, kinds of rocks.
   b. Developing an exhibit of local rocks and telling the story of their origin.
2. Discussing how the soil has been formed and studying soil profiles.
3. Learning the mineral resources of the outdoor area.
   a. Visiting nearby mines.
   b. Making a collection of mineral-bearing rocks.
   c. Using camp "mineralight" to study fluorescence.
   d. Using the Geiger counter to study radioactivity.

D. The Topography of the Land

1. Observing mountains, valleys, ridges, watersheds, divides, mesas, buttes and terraces.
2. Discussing formation, function, effect, and characteristics of land forms.
3. Studying problems of the land.

E. Water

1. Identifying the source of water found in the area—rain, streams, lakes, reservoirs, wells, springs.
2. Discussing the importance of water and man's responsibility for protecting the watershed.
3. Discussing the importance of the local area as one of the sources of water supply for farms and cities.
4. Tracing the camp water supply.
5. Observing the work of water.

F. Living Things

1. Studying the many interrelationships and interdependencies of living things.
   a. Dependency upon basic resources: soil, air, sunlight and water.
   b. Carbon dioxide cycle, photosynthesis, food chains.
2. Discussing the ecology of living things.
3. Learning about characteristics and functions of the different kinds of plants, insects, birds and animals observed.
4. Using instruments and equipment in the camp science laboratory.
5. Discussing man's relationship to his natural environment and his responsibility for wise use of the resources so abundantly provided.
6. Learning how the Indians made use of their environment.

II. Experiences in Conserving Natural Resources

A. Hiking to explore and observe natural resources.

B. Listening to nature talks.

C. Studying nature and exhibits in the camp museums.

D. Learning and abiding by rules and regulations of the State park system and United States Forest Service.

E. Practicing sound conservation procedures—good sanitation in forests and streams and lakes, picking up litter.

F. Using natural resources wisely—following thrift and conservation principles in collecting craft materials.

G. Working to improve and conserve natural resources.

1. Controlling soil erosion—wattling and building dams, retaining walls, diversion berms, gully plugs, and rock aprons.
2. Collecting and propagating seeds; nursery work.
3. Collecting wildlings (wild seedlings) for transplanting.
4. Planting seedlings: potted and/or bare root stock.

5. Providing Fire Protection
   a. Clearing debris and grass from danger spots.
   b. Learning and practicing good fire prevention and suppression techniques in cookouts and slash-burning operations.
   c. Reducing fire hazard by removing slash (limbs) and duff (leaves) from ground cover.
   d. Removing snags that attract lightning.
   e. Pruning dead limbs from trees and chaparral.
   f. Improving fire truck trails.
6. Improving Timber Stands
   a. Thinning dense stands.
   b. Removing "weed" trees.
   c. Pruning mistletoe.
7. Improving grazing land–clearing land of debris so that grass may grow.
8. Working on beetle control projects–cutting, limbing and treating trees to kill beetles.
9. Helping with bird and animal surveys.
10. Feeding wildlife in heavy snows.
11. Providing watering areas for wildlife.
12. Developing and maintaining trails.

III. Work Experiences

A. As a part of the camping activity.
   1. Cleaning cabins, activity rooms and campgrounds.
   2. Washing dishes, and setting tables.

B. As an effort to improve the camp program.
   1. Constructing bridges, retaining walls, council meeting area, and weather stations.
   2. Fireproofing high-hazard areas.
   3. Collecting special craft materials.

C. As an effort to improve the forest environment–working on conservation projects. (See section on conservation experiences.)

IV. Social Living Experiences

A. As a member of cabin groups (living together 24 hours a day–rest period, showers, cabin cleanup, planning, sharing, evaluating).

B. As members of activity groups–square and folk dancing, dramatics, games and stunts.

C. As members of the total camp group:
   1. Activity meetings.
   2. Evening programs.
   3. Free choice and games periods.
   4. Group singing of camp songs.

V. Arts and Crafts Experiences

A. Craft hikes to study, appreciate, and sometimes collect materials.

B. Craft work in shops.

1. Modeling native clay that has been found in the area and processed by students.
2. Arranging lichen, twigs of chaparral and bark to make miniature scenes or dwarf gardens.
3. Rock carving in massive gypsum (alabaster) or soapstone.
4. Making dried weed and flower arrangements.
5. Carving and fashioning objects of wood, pinecones and other forest products.
6. Making plaster of Paris casts of animal tracks, leaves and flowers.

VI. Music Experiences

A. Singing camp songs.

1. At general meetings, activity meetings, evening programs.
2. On activities, hiking, working, etc.
3. In the cabins.
4. At mealtime, in saying grace, and when washing dishes.

B. Listening to "mood" recordings during rest time, bedtime, meals and camp and work experiences.

VII. Experiences in Physical Education and Recreation

A. Square dancing
B. Fishing
C. Stunts
D. Tumbling
E. Games
F. Contests
G. Snow sports
H. Hiking

VIII. Experiences in Democratic Practice

A. Planning for enjoyable and safe living in cabins.

B. Establishing standards of courtesy, consideration and conduct.

C. Discussing and attempting to solve problems at camp.

D. Making choices of activities–activity signup.

E. Sharing experiences.

F. Evaluating experiences.

G. Making decisions about the program.

IX. Outdoor Skills Taught in the Camp Program

A. Use of compass and map.

B. Use of "Mineralight."

C. Use of Geiger counter.

D. Ore panning (mining).

E. Use of planetarium.

F. Fire building and outdoor cookery.

G. First aid procedures.

H. Use of craft and conservation tools.

I. Animal tracking.

J. Survival techniques.

K. Use of weather instruments.

L. Use of telescopes and field glasses.

M. Use of microscope and magnifying glasses.

N. Use and care of fishing equipment.

Variations in the Program

The activities program will vary at each of the camps because of the differences in the physical plants and the surrounding environments. However, all of the basic learning experiences will be included in each of the camp programs. These are described in the camp teacher's guide, *Outdoor Education*, which may be found in the camp kit.

In planning with the students for participation in the outdoor education program, the teacher should bear in mind that specific activities may not be available during the week for one of the following reasons:

1. Changes in weather–snow, rain, wind. (Cookouts and all-day hikes may be canceled. An inclement weather program may be in effect all week.)

2. Changes in season:

   – Trees can be planted only during a short wet season.

   – Snakes or cattle may rule out certain hikes.

3. Special conditions:

   – There may not be an active beetle problem to control.

   – Flood or fire conditions may offer special opportunities.

   – Illness may limit the program.

There is less chance for disappointment when the camp activities are planned in general terms and on a tentative basis.

In order to get up-to-the-minute information about the activities, the class might write to camp to have questions answered. Requests for information are mailed to the camp several weeks prior to the encampment.

THE SCHEDULE OF CAMP AND OUTDOOR ACTIVITIES

The sample weekly schedule for the camps (page 49) gives an overview of the week's activities and shows the sequence of experiences throughout the day. Changes may be made in the schedule because of weather, seasonal interests, and unforeseen emergencies. The schedule provides a framework from which to depart. In general, the schedule of time periods will be adjusted to have students rise earlier in spring and fall and later in the winter.

APPENDIX G

SAMPLE EVALUATION FORMS

SAMPLE

OUTDOOR SCHOOL CLASSROOM TEACHER QUESTIONNAIRE

Teacher's Name _____ Date _____

School _____ District _____

Please complete this form before you leave the outdoor school on Friday. Your comments will help the onsite staff to keep informed about situations and conditions at outdoor school. Your suggestions will aid the outdoor school staff in efforts to upgrade the instructional program and improve effectiveness of the different activities at outdoor school.

1. Overall, what do you think your class learned at outdoor school that they might not have learned in a "traditional" classroom setting?

2. Was there a balance or blend of the three thrusts: the natural environment, social living, conservation and protection of the environment? Yes ____ No ____

3. Was the outdoor school program an effective laboratory for learning to live with others? Yes ____ No ____

4. Have you noticed that your pupils have developed more positive attitudes toward the environment? Yes ____ No ____

5. Do you use Nature's Classroom? Yes ____ No ____

   If yes, how?

   Suggest changes you would like to see in the guide (use reverse side of evaluation sheet if necessary).

6. How much time was spent in preparing your class for outdoor school?

7. What things did you do in preparing your class for outdoor school?

8. What activities, if any, have you planned for your class as a follow up to the outdoor school experience.

9. How can the onsite outdoor school program be improved? (Use reverse side of evaluation sheet if necessary.

1-29-75

SAMPLE
OUTDOOR SCHOOL PUPIL QUESTIONNAIRE

Pupil's name _____

School _____ Teacher _____

Date of attendance _____ Cabin Group _____

1. Did you enjoy your week at outdoor school? Yes ____ No ____

2. Did you make new friends? Yes ____ No ____

3. How did you feel about your cabin mates at the first meeting on Monday? (Check one)
____ I like them. ____ I wasn't sure I liked them. ____ I didn't like them.

4. After one week of living with your cabin mates how do you feel about them now? (Check One)
____ I like them. ____ I am not sure I like them. ____ I don't like them.

5. Did you like the food? Yes ____ No ____

6. Do you think pupils in future classes should attend outdoor school? Yes ____ No ____

7. Do you feel different about the outdoors and the natural environment after you have attended outdoor school? Yes ____ No ____ If yes, explain.

8. Of all the things you did at outdoor school, which ones did you like?

Check the activities you liked.

TRAIL ACTIVITIES

____ Daily Hikes
____ Long Hike (Thursday)
____ Night Hike

DINING HALL ACTIVITIES

____ Setting Tables
____ Washing Dishes
____ Practicing Good Table Manners
____ Being Host, Hostess, or Hopper

CABIN ACTIVITIES

____ Cabin Housekeeping
____ Rest Period
____ Letterwriting
____ Storytelling and talking

PROJECTS

____ Planting Trees
____ Building Trails
____ Cutting Wood
____ Creative Crafts

LARGE GROUP ACTIVITIES

____ Campfire
____ Folk Dancing
____ Stories and Skits
____ Ranger Visit

OTHER

_____
_____
_____
_____

9. List any ideas you have to make the outdoor school better. (Use reverse of this questionnaire)

SAMPLE

OUTDOOR SCHOOL PARENT QUESTIONNAIRE

Child's Name _____

School _____ Teacher _____

Date of your child's attendance _____

Your child has just returned from a week of outdoor school attendance. The program is planned to provide worthwhile educational experiences which cannot be offered as effectively at any other school setting. We are interested in your reactions to the Colby Ranch Outdoor School Program and in your suggestions for improvement. Your answers to the following questions, as well as your general comments, will be most helpful.

1. Did your child enjoy the week at outdoor school? Yes ____ No ____

2. What did your child talk about most after attending outdoor school?

3. In your opinion, what did your child learn at outdoor school?

4. Has your child's attitude about the outdoors and the environment changed after attending outdoor school? Yes ____ No ____ If yes, explain.

5. Has your child's attitude or behavior in relations with the family and home changed since attending outdoor school? Yes ____ No ____ If yes, explain.

6. Did your child make new friends at outdoor school? Yes ____ No ____

7. Do you think pupils in future classes should attend outdoor school? Yes ____ No ____

8. Suggest any improvement you feel should be made in the outdoor school program? (report situations or conditions your child did not like during the week). Use back of this form if needed.

_____
Parent's Signature

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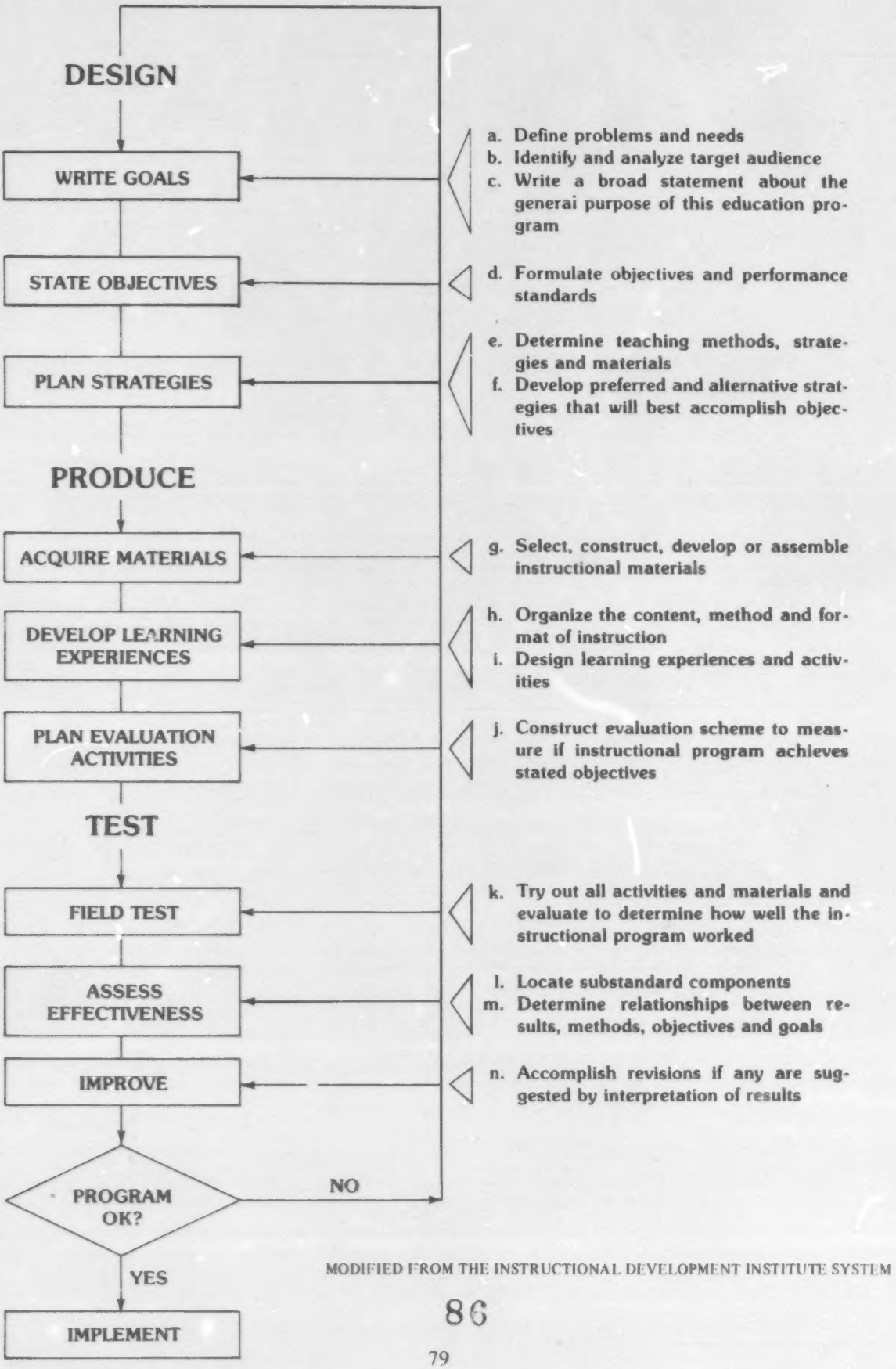
APPENDIX H

SUGGESTED OUTLINES FOR ORGANIZING A RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION SCHOOL

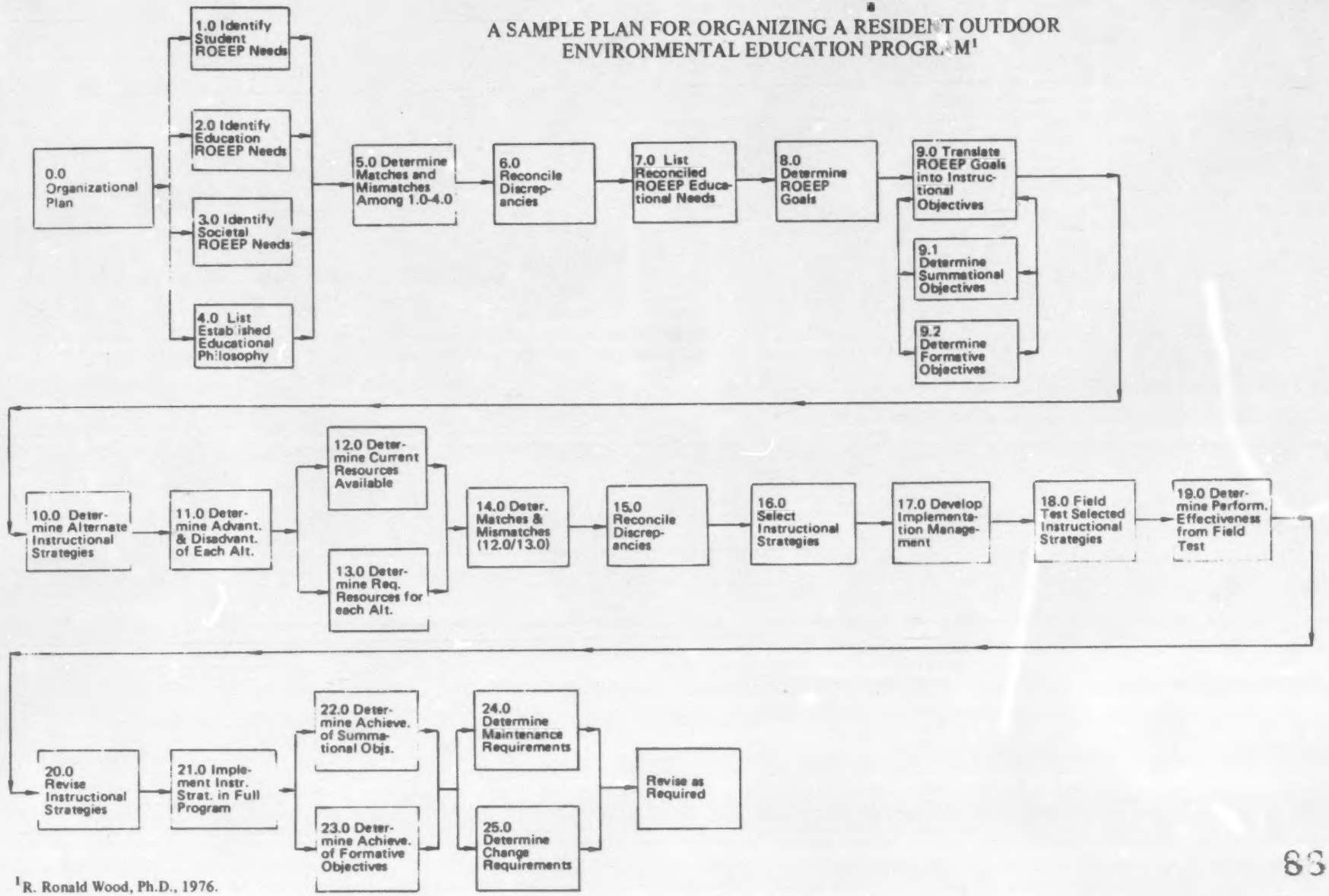
I. General Plan

II. Specific Plan


DESIGN
WRITE GOALS
STATE OBJECTIVES
PLAN STRATEGIES
PRODUCE
ACQUIRE MATERIALS
DEVELOP LEARNING EXPERIENCES
PLAN EVALUATION ACTIVITIES
TEST
FIELD TEST
ASSESS EFFECTIVENESS
IMPROVE
PROGRAM OK?
NO
YES
IMPLEMENT
a. Define problems and needs
b. Identify and analyze target audience
c. Write a broad statement about the generai purpose of this education program
d. Formulate objectives and performance standards
e. Determine teaching methods, strategies and materials
f. Develop preferred and alternative strategies that will best accomplish objectives
g. Select, construct, develop or assemble instructional materials
h. Organize the content, method and format of instruction
i. Design learning experiences and activities
j. Construct evaluation scheme to measure if instructional program achieves stated objectives
k. Try out all activities and materials and evaluate to determine how well the instructional program worked
l. Locate substandard components
m. Determine relationships between results, methods, objectives and goals
n. Accomplish revisions if any are suggested by interpretation of results

MODIFIED FROM THE INSTRUCTIONAL DEVELOPMENT INSTITUTE SYSTEM

A SAMPLE PLAN FOR ORGANIZING A RESIDENT OUTDOOR ENVIRONMENTAL EDUCATION PROGRAM[1]


0.0 Organizational Plan
1.0 Identify Student ROEEP Needs
2.0 Identify Education ROEEP Needs
3.0 Identify Societal ROEEP Needs
4.0 List Established Educational Philosophy
5.0 Determine Matches and Mismatches Among 1.0-4.0
6.0 Reconcile Discrepancies
7.0 List Reconciled ROEEP Educational Needs
8.0 Determine ROEEP Goals
9.0 Translate ROEEP Goals into Instructional Objectives
9.1 Determine Summational Objectives
9.2 Determine Formative Objectives
10.0 Determine Alternate Instructional Strategies
11.0 Determine Advant. & Disadvant. of Each Alt.
12.0 Determine Current Resources Available
13.0 Determine Req. Resources for each Alt.
14.0 Deter. Matches & Mismatches (12.0/13.0)
15.0 Reconcile Discrepancies
16.0 Select Instructional Strategies
17.0 Develop Implementation Management
18.0 Field Test Selected Instructional Strategies
19.0 Determine Perform. Effectiveness from Field Test
20.0 Revise Instructional Strategies
21.0 Implement Instr. Strat. in Full Program
22.0 Determine Achieve. of Summational Objs.
23.0 Determine Achieve. of Formative Objectives
24.0 Determine Maintenance Requirements
25.0 Determine Change Requirements
Revise as Required

[1] R. Ronald Wood, Ph.D., 1976.

APPENDIX I

GUIDELINES FOR TRAINING RESIDENT OUTDOOR/ENVIRONMENTAL EDUCATION (ROEEP) CERTIFICATION VISITORS[1]

I. GOAL AND OBJECTIVES OF ROEEP VISITORS

A. Individuals will be screened and trained to assist administrators, staff, and/or others in appraising resident outdoor environmental education centers for the purpose of showing strengths and weaknesses of site, facilities, and program provided and of suggesting improvements.

B. Training will be accomplished in planned workshop sessions.

1. Participants will receive all explanatory material available and copies of instruments to be used in the appraisal process, and they will become familiar with application possibilities.

2. Workshops of at least 12 hours will be conducted to provide visitor trainees with opportunity to clarify intent and application procedures for the instruments to be used.

II. ROEEP VISITOR TRAINING PROCESS

A. Trainees will become informed concerning ROEEP.

1. Each trainee will receive a guide and samples of forms to be used.

2. Trainees will practice application of appraisal forms in training workshops.

3. Every trainee will demonstrate during participation in a training workshop that he/she is capable of interpreting intent and application instructions for outdoor education center personnel.

B. Trainees will practice use of appraisal forms and personal communication with center personnel regarding results of the appraisal.

C. Trainees will demonstrate before they are approved as members of ROEEP visitor teams that they understand the purpose and procedure involved and that they are capable of developing reports requested concerning visits.

III. EVALUATION OF THE VISITOR TRAINING PROGRAM

A. The State Department of Education will receive and evaluate reports from the ROEEP visitor teams.

B. School districts and/or other educational units involved in operation of a resident outdoor environmental education center will evaluate effectiveness of the ROEEP visitor team.

[1] William Hammerman, Professor of Education, California State University at San Francisco.